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## DESIGN AND PRINT

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'The Indian Institute of World Culture'  
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*Design and Print*



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# Design and Print

## PREFACE

DESIGN is still viewed by many printers and their apprentices as an uninteresting and unnecessary subject, and there are very few printing houses in this country who employ even a part-time designer. On the continent of Europe and in Canada and the United States of America, however, the design of printed matter—be it large or small—is considered of the utmost importance and is reflected in the quality and variety of the work produced.

The aim of this book, therefore, as with the others comprising this series, is to present a concise and comprehensive review of the subject while not encroaching upon the individual approach of respective instructors.

In covering such items as the evolution of the alphabet, colour theories, and aesthetics, it is my sincere hope that this book may be the instrument by which both lecturers and students may be released from the time-consuming practice of "dictated notes," thereby allowing more class periods to be devoted to practical experience in design and the correct use of the various artists' materials.

E. G. SHEPHERD

August 1963.

August E. G. Shepherd  
1963

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*Section I*

*The Evolution of the Typeface*



## CHAPTER ONE

# EARLY ALPHABETS: THE DAWN OF WRITING

---

WE, as typographers, are daily concerned with the task of expressing thoughts through the medium of the printed word—yet how many of us can truthfully claim any knowledge whatsoever regarding the basic tool of our profession—the alphabet? There are, of course, many alphabets—for Arabic, Hebrew, Russian, Turkish, and scores of other languages—not one of which is perfect. A perfect alphabet would indicate not more than one sound by one symbol. Our own alphabet obviously does not measure up to this ideal; all vowels have several sounds, some consonants have sounds that are duplicated by other letters, and one or two have the sound value of diphthongs. Languages other than English make a more rational use of our common alphabet, but all suffer to some degree from its disadvantages.

Whatever its faults, however, the alphabet is the basic framework for presenting visually the spoken word, and it is of some value to know how this framework evolved. The precise origin of the alphabet is lost in antiquity, but extensive study and research has produced the following facts.

### CUNEIFORM WRITING

Generally accepted as being the oldest system of writing, *cuneiform* (the wedge-shaped characters of Ugaritic and Babylonian scripts) was invented by the Sumerians and adopted and used by the Babylonians, Assyrians, and



FIG. 1.—Black memorial stone inscribed in Babylonian cuneiform characters. It gives a summary of the restoration of the temples and walls of Babylon, during the reign of Esar-haddon, King of Assyria.

Persians for over 3000 years. The name is derived from the Latin, *cūmen* (wedge), for the marks were impressed with a wedge-shaped stylus into pieces of soft clay, which were then baked hard in the sun or in primitive ovens. These marks form its syllabic signs and alphabet (*see Fig. 1*).



FIG. 2.—Egyptian hieroglyphics reproduced from the *Book of the Dead*.

## HIEROGLYPHIC WRITING

The Egyptian picture writing, more commonly referred to as *ideographic* or *hieroglyphic* writing, provided the foundation for our present alphabet over 5000 years ago (see Fig. 2).



FIG. 3.—Hieratic writing from the papyrus of Queen Netchemet in the *Book of the Dead*.

In hieroglyphic writing a separate symbol is necessary for every individual *object* and *idea*; however, in about 3000 B.C. the Egyptians invented the first alphabet, though it never displaced their hieroglyphic writing.

To appreciate the changes through which the hieroglyphs progressed to become the characters we now use, it is necessary to realise that, unlike the cuneiform writing of the

Babylonians, hieroglyphic characters were written on soft papyrus with reed pens—this not only facilitated the production of flowing lines in the symbols but also led to a gradual degeneration of the original symbols as they were corrupted by the hurrying hand of the Egyptian scribes in writing Hieratic, a running hand (*see* Fig. 3).

The symbols were corrupted even more in the writing of Demotic, a quickly written cursive form of the Hieratic, used in the main by the people; the Hieratic being still retained by the Priests.

#### THE INFLUENCE OF THE PHOENICIANS AND GREEKS

The evolution of the alphabet progressed through the Phoenician traders of Tyre and Sidon, and the Aramaean merchants of Damascus, later spreading throughout Europe and Asia.

From the Egyptian alphabet which originally had over six hundred different characters the Phoenician traders of Tyre and Sidon evolved an alphabet containing only twenty-two characters. The Greeks made contact with the Phoenicians trading along the Mediterranean coast, and it is reasonable to accept that the Greeks adopted the Phoenician alphabet.

The twenty-two-character alphabet, however, proved insufficient for the needs of the classic period of Greek literature and, after certain minor changes, the Greek alphabet accepted by Athens in 403 B.C. consisted of twenty-four characters (Fig. 4). It is interesting to note that it is from the words *alpha* and *beta*, the names of the first and second letters in the Greek alphabet that the very word *alphabet* originated.

To illustrate the probable development of the letter forms, the chart (Fig. 5) has been compiled. Although the characters

may appear to have changed out of all recognition, reference to the boxed headings will show that this took thousands of years to accomplish.

The Phoenicians wrote from right to left, whereas the Greeks evolved a system of writing the first line from right to left, the second line from left to right, and so on throughout the script. This system of writing, which contained neither spacing between the words nor any form of punctuation, was referred to as *boustrophedon*, implying that it was done in both directions alternately—as a team of oxen plough a field. It was not until the sixth century B.C. that the Greeks began writing from left to right as we do now.



FIG. 4.—The Greek alphabet of 403 B.C.

#### DEVELOPMENT BY THE ROMANS

In studying the evolution of letter forms it will be seen from the Greek inscription (Fig. 6) that they presented an almost pure sans-serif characteristic.

The Romans, however, developed their inscriptions with an elegance of form and perfection of line which some think have never been surpassed. The horizontal strokes of letters were carved narrower than the verticals; and the first stroke of the letter A (as with the first and third strokes of the letters M and N) was made thinner than the other; at the same time the terminals of the stroke were opened out very slightly in order to eliminate the optical illusion that the strokes were thicker in the middle than at the ends.

EGYPTIAN		SEMITIC	Classic Greek	Roman Uncial	Roman Minuscule	Modern Majuscules and Minuscules
Hieroglyphs 5,000 - 4,000 B.C.	Hieratic 3,000 - 2,500 B.C.	Phoenician 1,500 B.C.	600 - 300 B.C.	A.D. 800	A.D. 800	A.D. 1960
a	𢂔	𐤀	Α	α	A a	A a
b	𢂕	𐤁	Β	β	B b	B b
c	𢂖	𐤂	Δ	δ	D d	D d
d	𢂗	𐤃	Ε	ε	E e	E e
e	𢂘	𐤄	Ϛ	Ϛ	M m	M m
f	𢂙	ߵ	Ϻ	ϻ	R r	R r
g	𢂚	߶	Ϙ	ϙ	T t	T t
h	𢂛	߷	ܽ	ܽ	Z z	Z z
i	𢂜	߸	ܿ	ܿ		

FIG. 5.—Chart illustrating the evolution of the alphabet.



FIG. 6.—Portion of Greek Doric column showing early Greek inscriptive lettering. Dating from about 600 B.C., the actual stone is now in the British Museum.

This alteration to the characters was actually the introduction of the serif, which will be dealt with in a later chapter.

Yet another indication of the Roman attention to the most

minute detail is clearly illustrated by reference to the Trajan Column inscription (*see* Fig. 7). When such lettering was to be placed far above normal eye level it was realised that perspective would make the first line in the inscription appear smaller than the last. To overcome this phenomena, each succeeding line was carved slightly smaller than its predecessor.

#### WRITING SURFACES

In this, the twentieth century, we take for granted the vast selection of paper surfaces ranging from manifold bank to millboard, from greaseproof to newsprint; yet only five hundred years ago all these materials were virtually unknown and there were no printed books. To appreciate the importance of paper to our very way of life, pause for a few moments and visualise the world without it. There would be no glossy magazines or record sleeves, no cigarette packets or food wrappers and, very important too, there would be no paper money! It is to a world such as this that we must return in search of the history of writing surfaces and instruments.

Archaeologists inform us that certain cave drawings exist which date back as far as 40,000 years before the birth of Christ. For our purpose, however, it is only necessary to go back 4000 years into the pre-Christian era to return in fact to the Egyptian hieroglyphic writing.

In those days man carved or chiselled his valuable records in stone, ivory, lead, bronze, or any other durable material. For matters of less importance it was commonplace to write on animal skins, leaves, the bark of trees, and so on. Unfortunately, being of organic origin, these materials were very perishable, and few examples have survived the ravages of time. Other writing surfaces did exist, however, and have

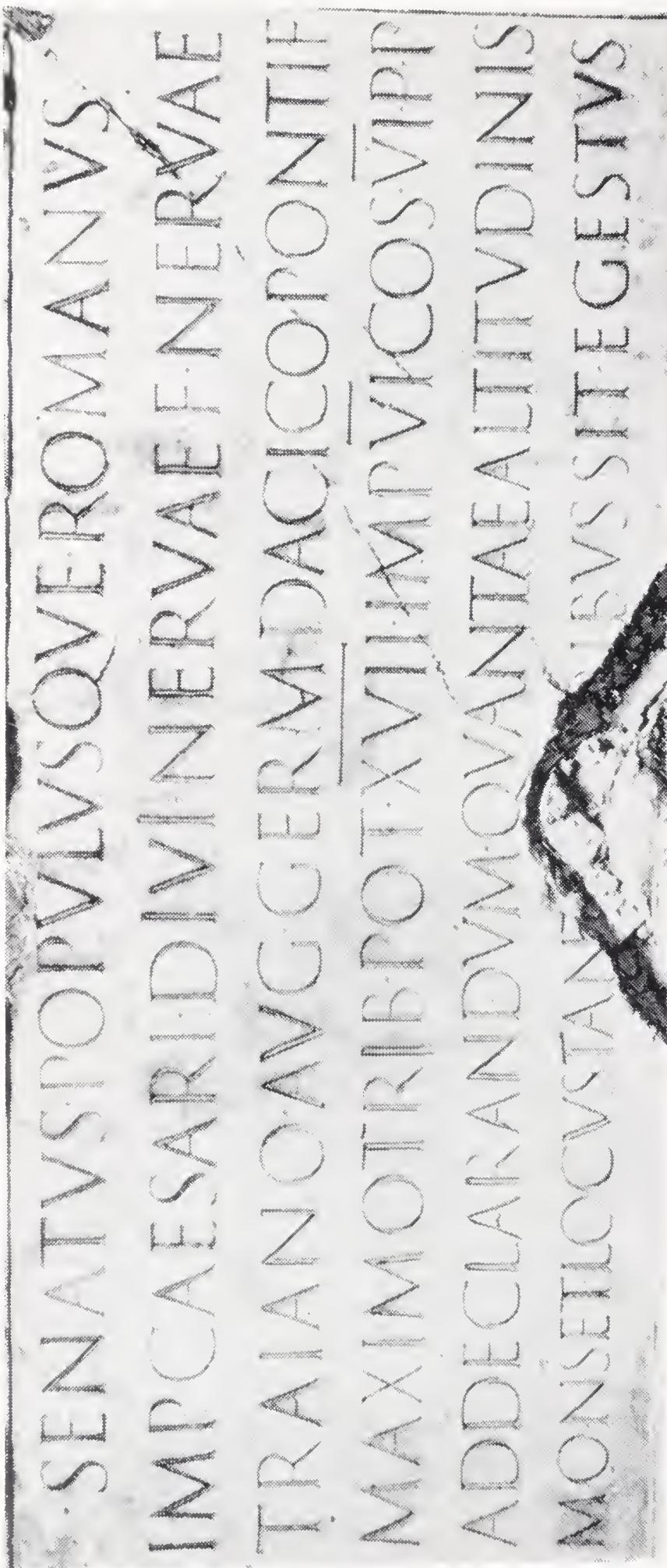


FIG. 7.—The Trajan Column inscription.

The panel measures 3 ft 9 in. by 9 ft  $0\frac{3}{4}$  in. Lines 1 and 2 are  $4\frac{1}{2}$  in. high, lines 3 and 4 are  $4\frac{3}{8}$  in. high; the last two lines measure  $4\frac{1}{8}$  in. and  $3\frac{7}{8}$  in. respectively.

survived the centuries, enabling us to study them and understand more readily the progress of civilisation: it is to these writing surfaces that our studies are now directed.

### Baked Clay

As previously explained, the use of clay as a writing material was known to the people of Babylonia (now called Iraq). The soft, moist clay, which was to be found in the low-lying plains of the rivers Euphrates and Tigris, was shaped into bricks or tablets of a convenient size on which letters were written with a pointed twig. This method of writing was

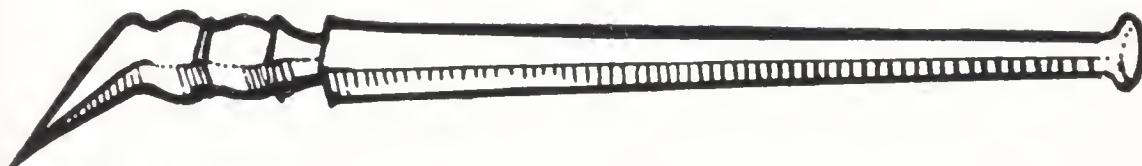


FIG. 8.—Bronze Stylus. The actual instrument from which this drawing was made measures  $5\frac{1}{2}$  in. long.

rather slow, due to the tendency of the stick to drag in the moist clay, and led to the introduction of the stylus (a piece of bone, wood, or metal with a wedge-shaped end) which was impressed into the clay to form the writing known as cuneiform (*see Fig. 1*).

To preserve the tablets, they were hardened either by baking in crude ovens or, if not required to last for any considerable length of time, were simply placed in the hot sun to dry.

### Wax Tablets

In the fourth century B.C. waxed tablets were widely used in Greece and Rome as writing surfaces. These tablets were easily made by hollowing out a piece of wood or ivory to a depth of about one-tenth of an inch and then pouring in a

thin layer of warmed black wax—the tablet then looked very similar to a present day child's writing slate.

As with cuneiform writing, the instrument used on the wax surface was a pointed stylus (*see* Fig. 8) made of either ivory, bone, or metal with a blunt, wedge-shape at the reverse end which served to make corrections in the wax by smoothing out the errors in much the same way as we would use an eraser.

To protect the wax inscriptions, or in the event of a letter or document requiring more than one tablet, it was the usual practice to pierce two holes through the back edge of each tablet and then place two of them face-to-face, securing them with cords or leather thongs passed through the holes.

The use of waxed tablets continued extensively in both Europe and Ireland until the Middle Ages.

### Papyrus

Over 5000 years ago the Egyptians were writing on a paper-like substance obtained from the papyrus, a plant which grew profusely along the banks of the river Nile (*see* Fig. 9).

The papyrus plant, or sedge, grew to a height of some 15 ft, with a triangular stem about 5 in. in thickness and surmounted by a tufted growth. The writing surface made from it was produced by cutting the stem into short lengths (12–18 in.) and peeling off the outer skin to reveal the pith: this was cut into ribbon-like strips which were laid side by side with their edges barely overlapping and a second layer was placed on top of the first but at right angles to it.

This double laminated sheet was transformed into a single writing surface by beating firmly together with a wooden mallet, the natural gummy sap contained in the pith acting as a binding agent. To make the surface smooth and even



FIG. 9.—The papyrus sedge.

enough to write upon, it was polished with shells or pieces of ivory until it resembled very closely our modern paper which, of course, derives its name from the word papyrus.

These single sheets measured from 5 to 18 in. in width and up to a foot in length. Books requiring more than a single sheet were produced by pasting numerous sheets together to form one long, continuous strip, which was then rolled up in the shape of a scroll (Fig. 10). In the British Museum can be seen the longest of these rolls so far discovered —written *circa* 1170 B.C., it is 17 in. wide and 135 ft in length.

#### Parchment and Vellum

Between the third and seventh centuries A.D., parchment and vellum steadily displaced the use of papyrus in Europe.

Vellum is the name applied to the specially prepared skins



FIG. 10.—Ancient Hebrew scholar reading from a papyrus scroll.

of calves, while parchment is the correct term for goat and sheep skins similarly prepared. Until the Saracens carried to Spain the art of paper-making, vellum and parchment were the only writing surfaces available in Europe.

The use of these skins had a marked effect upon the development of books. For the first time the scribes were supplied with a smooth, durable, and supple material which, unlike other surfaces, could be written on both sides.

In preparing the skins they were soaked, washed, and then scraped to ensure the removal of all grease and hairs before rubbing smooth with pumice-stone. The resulting material had the appearance of very thin leather, and could be bent or folded without creasing or cracking. Slightly yellowish in

colour, it resembled closely the smooth parchment now used in the manufacture of certain lampshades.

Though used as a writing material from the second century B.C., it was not until some five hundred years later that parchment became popular following a decree by the Roman Emperor Constantine that fifty copies of the Christian Scriptures be written on parchment to ensure their preservation for generations to come.

Although the art of paper-making was introduced into Europe during the twelfth century, parchment and vellum were still very widely used until the end of the fourteenth century, when paper as we know it today was used for the first time in book work.

Due to the scarcity of vellum in the Middle Ages, many old manuscripts were treated to erase the original writing and permit the skin to be used again—skins thus treated are called *palimpsests*. The re-use of vellum in this way unfortunately destroyed many old and original works, though means have since been found whereby the old lettering can be restored to show faintly through the lines of the second writing.

#### PEN AND INK

Various inks were used in writing on papyrus. One of these was made from a mixture of soot and gum, while another was obtained from the sepia liquid ejected by cuttlefish. The “rubricated” or red portions of the manuscripts were written with an ink composed of a mixture of gum and a minutely ground red soil.

The most popular writing instrument for use on papyrus appears to have been either a reed or metal pen. The *calamus*, a hollow reed pen (*see* Fig. 11), was some 5 or 6 in. in length and was cut at one end so that it closely resembled the



FIG. 11.—A Calamus (or hollow reed pen). Actual length  $5\frac{3}{4}$  in.

type of pen-nib used today, even down to the slit to assist the flow of ink. At a later period the Romans introduced bronze and silver pens fashioned on the lines of the reed (Fig. 12).

As the use of parchment and vellum became more widespread, so the quill pen displaced the reed and metal pens as the writing instrument of choice (see Fig. 13). The reason



FIG. 12.—Bronze Pen. Actual size  $4\frac{1}{2}$  in. long.

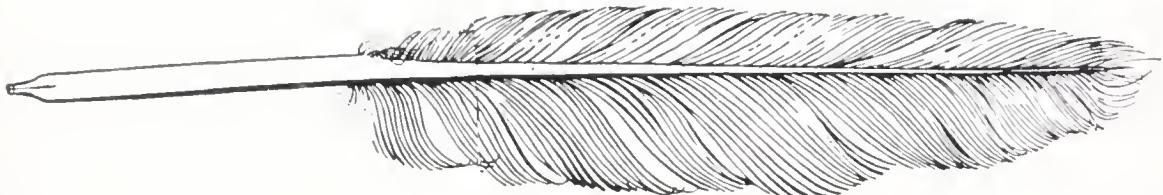


FIG. 13.—Quill Pen. Usually made from the large strong feather of a bird's wing.

for this would appear to be that the point could be made very fine and yet have greater strength than the reed pen; at the same time the metal pens were found to be too rigid and caused damage to the surface if not handled with extreme care. The word pen is derived from the Latin *penna*, meaning a feather or quill.

The ink used was either a mixture of soot, gum, and vinegar or a liquid obtained by boiling oak gall (a hard round excrescence found on certain species of oak) and pieces of

old iron in sour wine—this latter ink, however, had a tendency to fade unless kept away from direct sunlight.

The previous paragraphs and illustrations give some idea of the different writing surfaces, instruments, and inks employed by the ancient scribes up to the end of the fourteenth or early fifteenth century. With the rediscovery of printing from movable types by Johannes Gutenberg in 1445 our interest in this subject must be directed towards the introduction of *printing surfaces*, which are dealt with in Chapter 8.

#### STUDY QUESTIONS

##### *Early Alphabets*

1. Place in correct chronological order the following: hieratic, cuneiform, demotic, hieroglyphic writing.
2. What do you understand by the term *ideographic* or *hieroglyphic* writing?
3. Who used cuneiform writing, and from what source is the name derived?
4. Explain the meaning of the word *boustrophedon* as applied to early Greek writing.

##### *Writing Surfaces and Instruments*

5. How did the Babylonians preserve their writings and from what source did they obtain their writing material?
6. Describe the method of making a waxed tablet and accompany your essay with an illustration of the writing instrument used on that surface.
7. Discuss the advantages and disadvantages of papyrus and parchment as writing surfaces.
8. If you wished to see actual examples of the ancient writing surfaces and instruments, where would you expect to find them?
9. Mention is occasionally made of *palimpsests*, what does this imply and why was this term ever originated?

## CHAPTER TWO

# THE DEVELOPMENT OF LETTER FORMS

---

**I**N the previous chapter the birth and evolution of the alphabet was traced from the ancient Egyptian hieroglyphic characters of 5000 B.C. up to and including the fifth century A.D. From this period the alphabet changed but very little, and it is opportune therefore to direct our attention to the development and evolution of letter forms.

### SQUARE CAPITALS

During the first five centuries A.D. the Roman scribes developed a book-hand of written capitals which closely resembled the characters cut in the stone inscriptions of that period. This style of lettering, referred to as *square capitals* (*see* Fig. 14), had heavy downstrokes and light upstrokes, while the rounded letters were almost true circles (or parts of circles).

In writing this letter form the reed pen was held with the nib almost parallel to the base line—this produced the heavy downstrokes and fine serifs so characteristic of this letter.

NAM PRIMICVNTEISSCIND  
TYMYARIAEVENERARTESL  
IMPROBEIDVRISSVRGEN  
PRIMACERESFERROMORT

FIG. 14.—Roman Square Capitals of the fourth century A.D.

## RUSTIC CAPITALS

As the Egyptian hieroglyphic writing developed into hieratic and demotic writing due to the more hurried letter formation made possible by the smooth-surfaced papyrus, so did the severe square capitals of the Romans develop into *rustic capitals*.

Making their appearance at about the same time as the square capitals, these characters were more easily formed due to the oblique angle at which the pen was held, and resulted in the formation of a more compact letter in which the rounded characters were no longer true circles. There was an oblique stress to the rounded characters also, and the formal appearance of much of the writing slowly disappeared; there was also a tendency at that time to terminate the strokes of certain characters with ornamental flourishes of the pen (*see Fig. 15*).



FIG. 15.—Rustic Capitals of the fifth century A.D.

The end of the fifth century, however, saw the gradual disappearance of the square and rustic capitals and the introduction of other letter forms.

## ROMAN CURSIVE

This running-hand was adopted by the ordinary classes for their private and business correspondence, examples having been found preserved on waxed tablets and papyrus sheets.

Capable of being written at a very great speed due to its ease of formation, this hand soon became so hurriedly and carelessly executed as to become almost illegible—but this very speed and lack of care, allied with its inevitable influence on the formal book-hands—resulted in the formation of many of our present lower-case characters.

## ROMAN UNCIALS

This variety of *majuscule* (or capital) writing (Fig. 16), unlike the rustic capitals which preceded it, exhibits a rounder, more open characteristic, and certain letter forms underwent

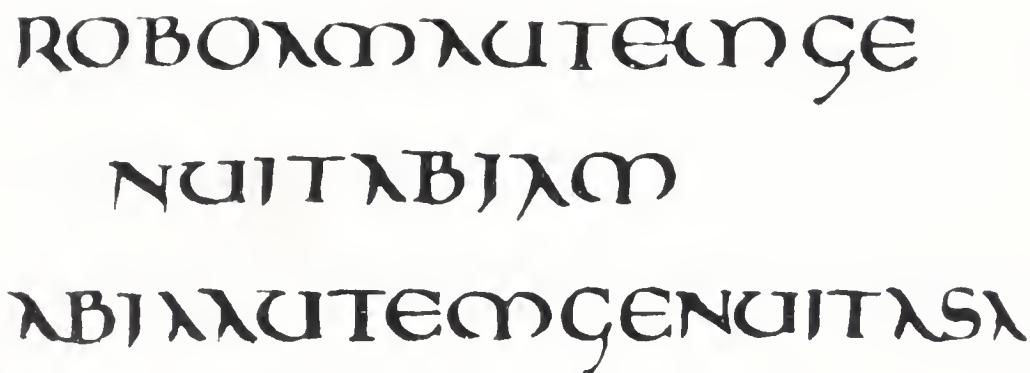


FIG. 16.—Roman uncial writing of the mid-eighth century A.D.

a considerable change. The D, for instance, became almost an inverted letter Q, the E was formed like a C with a cross bar projecting horizontally across the centre—this cross bar was sometimes linked up at both ends (as it is in our modern lower-case e). The M was created by two sweeping curves of the pen, and the T was occasionally made with a small hooked foot. All these alterations arose from the need to keep the pen in more constant contact with the writing surface, thus increasing the speed of writing.

The name *uncial* is presumed to be a corruption of the Latin *uncia*, meaning an inch. This would appear to indicate

that these letters were made 1 in. in height, but there exists no real evidence in support of this theory, and the name is therefore somewhat misleading. It is possible that the derivation is from *uncus*, a hook.

From the fourth to the eighth centuries A.D. the uncial developed into an important book script, and the origin of many of our present-day lower-case letters can be traced back to this very period.

#### HALF UNCIALS

Although the name seems definitely linked with the Roman uncials of the same period, the origin of this letter form is open to conjecture. Whatever its beginning, however, this book hand developed from the fifth to the eighth century A.D. and, with the exception of the letter N, evolved into an almost entirely minuscule (or small letter) alphabet (*see Fig. 17*).

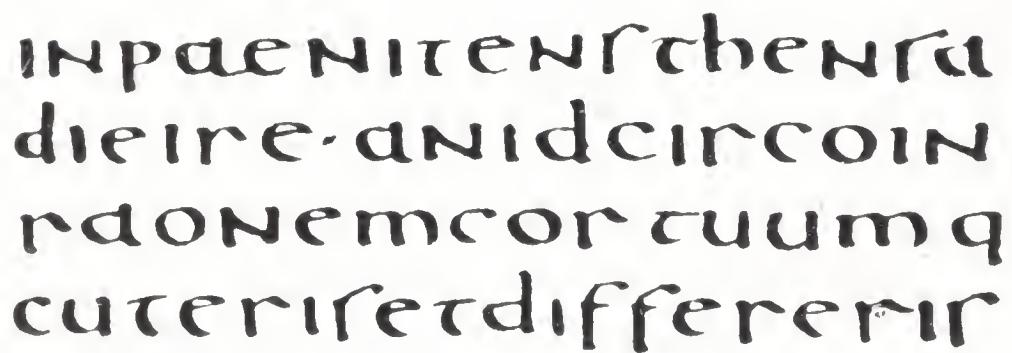


FIG. 17.—Half uncials. Seventh century A.D. Note development of minuscule characters.

#### NATIONAL HANDS

Until the fifth century A.D., Roman writing was employed throughout the Roman Empire and, wherever Latin was used, so was the Roman script.

During the fourth and fifth centuries, however, the Roman Empire was repeatedly attacked by the invading Goths and,

in A.D. 401, Rome itself fell to the onslaught of the barbaric hordes.

The various countries were thus freed from Roman influence and began to develop their own individual letter-forms, which bore little or no resemblance to the Roman writing.

As these hands took on new characteristics and changed into the national hands of independent regions there appeared the Lombardic or Beneventana scripts in Southern Italy (*see Fig. 18*), Visigothic writing in Spain, and Merovingian writing in France.

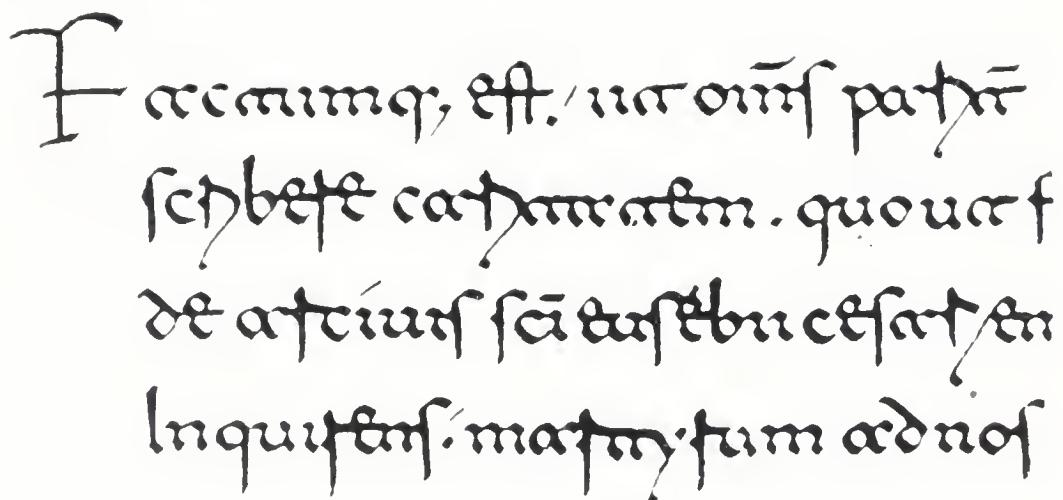


FIG. 18.—Fully-developed Beneventana Script, twelfth century.

#### INSULAR SCRIPTS

These scripts, based on uncial and half uncial writing, appeared in the British Isles during the fourth century and are of particular interest due to their later influence on the Continent.

The art of writing was brought to Ireland in A.D. 432 by a monk who, as a youth of sixteen, had been captured by pirates and taken to Ireland, where he worked as a swine-herd before managing to escape. He settled in France and

devoted himself to the Christian religion. Many years later he returned to the country which had once held him captive; but this time as Bishop Patricius, a name bestowed upon him by the Pope.

St. Patrick and his missionaries taught their style of writing to the Celtic scribes, who soon perfected the half uncial hand, which, being free from outside influence, underwent but little change for many centuries. Undoubtedly the finest example of Irish half uncial writing is to be seen in the *Book of Kells*, which was written in the Monastery of Kells in County Antrim at the end of the seventh century. This beautifully written and illuminated book is now in the library of Trinity College, Dublin.

In A.D. 597 St. Augustine of Canterbury landed on the Kent coast from Rome to convert the then heathen English to Christianity. With him he brought the writing style of the Roman Church, and this hand was used in England until the introduction of the half uncial writing by the Irish missionaries.

History tells us that St. Columba (who founded the Monastery at Kells) made a copy of a Book of Psalms which he had borrowed from St. Finnian. When the copy was completed St. Finnian insisted that it was rightfully his and, as St. Columba would not part with it, the case was brought before Diarmaid, the Monarch of Ireland, at Tara. The Monarch found the case proved in favour of St. Finnian, saying "*To every cow belongs her calf; so to every book belongs its copy.*" St. Columba, however, still refused to part with the copy he had laboured so long to produce, and the quarrel between them culminated in a fierce battle at Culdremhue in A.D. 561.

Following this battle, for which Columba was blamed, he left Ireland with a few loyal followers and landed on the

small island of Iona in the Hebrides off the west coast of Scotland, where they founded a Monastery in A.D. 563. It is interesting to note that the Abbey buildings, plundered and destroyed on several occasions by the Vikings and later by the Danes, have been restored by the Iona Community. The Service of rededication was held there on June 18th, 1959.

About the year A.D. 632 King Oswald sent to the Monastery at Iona for a monk to become the Bishop of Northumbria. With the King's help, Aidan (the monk chosen) built a church and monastery on Lindisfarne island, which lies a few miles off the Northumberland coast, and it was there at the beginning of the eighth century that the famous *Lindisfarne Gospels* were written.

Consisting of the four Gospels in Latin and containing many beautiful illuminated initials, the *Lindisfarne Gospels* resemble very closely the *Book of Kells*, showing the influence of the Irish missionaries.

#### CAROLINGIAN MINUSCULE

In A.D. 768, at the age of twenty-six, Charlemagne and his brother Carloman inherited the kingdom of the Franks. Three years later, at his brother's death, Charlemagne became their sole ruler.

One of his main ambitions was the revival of book production and learning. During a visit to Parma in A.D. 781 he met Alcuin of York, an English monk noted for his fine book work, and invited him to undertake the organisation of the educational system of his kingdom.

From A.D. 781 to 790 Alcuin was Charlemagne's right-hand man in this gigantic task and had as his pupils the King of the Franks, the members of his family, and the sons of noblemen.

Alcuin's first concern was the standardising of a copying style for the many new versions of the *Vulgate Bible*, the greatest of the translations into the Latin made by St. Jerome *circa A.D. 400*. Especially important was the need for a clear, easy-to-read script, and it is due to the relentless efforts of Alcuin and his brother monks that the *Carolingian minuscule* was introduced. So named because it came into use during the reign of Charlemagne (whose family name was *Carolingian*), this beautiful and extremely legible script (Fig. 19) allowed a page of great lightness and crispness and brought fame to the Scriptorium of the Convent of St.

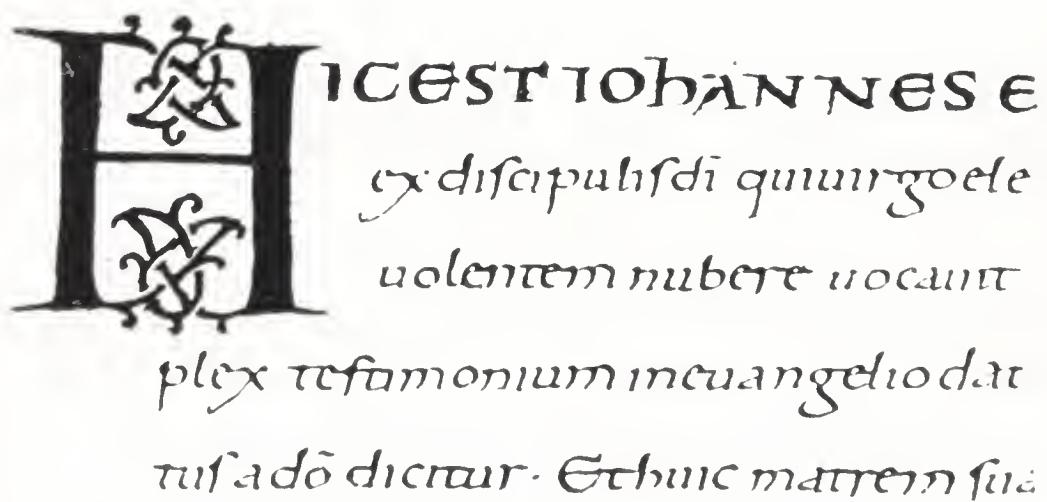


FIG. 19.—Carolingian minuscule writing, late tenth century.

Martin at Tours, where Alcuin of York was appointed Abbot in A.D. 796.

Now, for the first time, definite small (or minuscule) letters had made their debut; writing was divided into sentences and paragraphs; each sentence was begun with a capital letter and finished with a full stop.

The fame of this letter form spread throughout France; the square and rustic capitals were brought back into use for titles, while uncial and half uncial letters were

re-introduced for the less-important sub-titles and so forth. A fine example of capital and half uncial writing is to be seen in an early-ninth-century manuscript of *Suplicius Servus* which is now preserved at Quedlinburg in Germany.

Originally the Carolingian (or Caroline) script was round and somewhat widely spaced, but during the years it became laterally compressed, spacing was correspondingly reduced, the strokes became heavier, and it took on Gothic tendencies.

### GOTHIC

This angular and very compact letter form originated in northern Europe and soon became incredibly popular—spreading throughout the greater part of Europe and the British Isles from the tenth to the fifteenth centuries A.D., and reaching its greatest perfection during the thirteenth century. Italy appears to have been the only country never to have relinquished the roundness of the earlier hands, though a slight Gothic tendency did appear at a later period.

q̄m̄ aut̄ ēm̄ v̄m̄us n̄m̄ēn̄ est  
t̄ōx̄ et̄ c̄st̄ āp̄ellat̄ūm̄. C̄on̄ȳa  
t̄r̄s q̄m̄ p̄os̄ic̄ūm̄ īt̄ d̄om̄is ā  
superlat̄is īt̄ d̄om̄iss̄im̄is. Ē  
āp̄ellat̄ūm̄ d̄it̄ar̄it̄ qualit̄i

FIG. 20.—Late Gothic minuscule writing, Germany, fifteenth century.

Today, the term “Gothic” is loosely used to indicate such angular and laterally compressed letter forms as Goudy Text, Old English, and Black Letter. The latter name appropriately conveys the effect of this style of writing, with its

extremely bold, almost savage construction, which gave a black, yet rich appearance to the completed work (Fig. 20).

In the foregoing pages the development of letter forms has been traced during the thousand or more years prior to the fifteenth century A.D. From this period the continued development of letter forms is undisputedly linked with the rediscovery of printing from movable types, and is therefore dealt with in Chapter Three.

#### STUDY QUESTIONS

1. Place in correct chronological order the following: uncial, Roman cursive, Gothic, and Carolingian minuscule.
2. Name the famous book written in Ireland at the end of the seventh century and now in the library of Trinity College, Dublin.
3. What is meant by the term "rubricate," and how was it carried out?
4. Draw a copy of the Carolingian minuscule writing shown in Fig. 19.
5. By private investigation obtain a copy of Visigothic writing and explain the origination of the name.

## CHAPTER THREE

# FIVE CENTURIES OF TYPE DESIGN

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### THE FIFTEENTH CENTURY

THE early fifteenth century saw the introduction into Europe of playing cards printed from crude woodcuts (Fig. 21), followed by prints of religious pictures



FIG. 21.—Sixteenth-century playing card (reproduced by permission of the Museo Casa Guasp, of the Cathedral of Palma de Mallorca).

with engraved inscriptions produced in the same manner. Realising the advantages of this process, calligraphers adopted it as a cheap method of producing vast quantities of work. These books were engraved page by page on blocks of wood and printed by placing a sheet of paper on the inked block and rubbing off the impression—the printed sheets, finished and coloured by hand, were duly passed off on the less-informed public as being original hand-written manuscripts. A page printed from a wood block is reproduced in Fig. 22.

Numbers of these xylographic books appeared during the second quarter of the fifteenth century, and to them is given the generic name of *incunabula*—a term which includes the first tangible beginnings of both printing and engraving.

From the middle of the fifteenth century when Gutenberg cut the first punches and cast his first metal types to enable words to be composed, letter by letter, and afterwards reset to form other words, the course of world history, and in particular the history of book production, was changed.

Another claimant for the distinction of being the inventor of printing from movable types was Laurens Janzoon Koster of Haarlem, Holland. For more than two hundred years it was claimed that he was the inventor both of xylography and typography. The claim, however, appeared to be disproved by Dr. A. Van der Linde in 1869-70.\*

Gutenberg, however, was undoubtedly established in Mainz as a printer in 1450, and the legends evolved around him, supported by numerous plausible theories and assertions, make it reasonably certain that he should indeed be accepted as the inventor of printing.

\* For further information on this subject refer to *Alphabets*, by E. F. Strange, published in 1895 by George Bell & Sons, London.

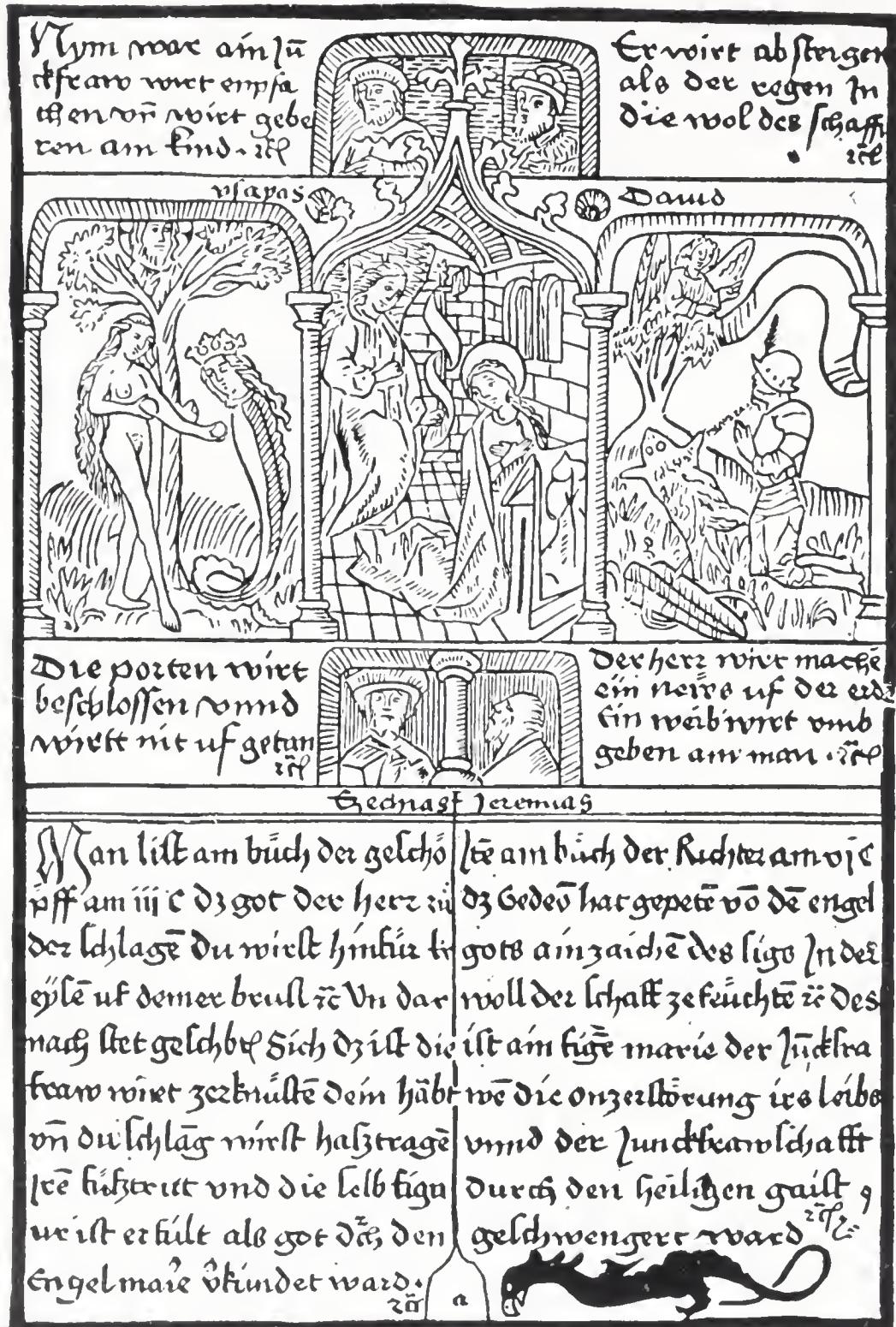


FIG. 22.—The first page from the *Biblia Pauperum*: a Latin name, meaning “poor man’s Bible.” It was printed in Germany in 1470, by Walther and Hurning. This page shows on the left the Temptation of Eve, in the centre the Annunciation, and on the right Gideon with the Fleece.

Accepting the previous evidence, it is now possible to establish a precise date for the commencement of letterpress printing, and with it the birth of type designing.

Among the works attributed to Gutenberg is the two-volume *Mazarin Bible*, the first complete book printed from movable type. This Bible, discovered in the library of Cardinal Mazarin of France, and otherwise known as the Bible of forty-two lines (due to the number of lines to each page), was completed in 1456.

Gutenberg unfortunately never included an imprint in any of his books, and it is only by careful research and the scrutiny of old printed works that it is possible to prove their origin and allocate the credit for their production.

The *Mazarin Bible*, for instance, contained a note at the back which read:

“This Book was illuminated, bound and perfected by Heinrich Cremer, vicar of the Collegiate Church of Saint Stephen in Mainz, on the Feast of the Assumption of the Blessed Virgin (August 15) in the year of our Lord 1456. Thanks be to God. Hallelujah.”

As it has been established that Gutenberg was engaged on the printing of such Bibles from 1450 to 1455, the origin of these two volumes is beyond any reasonable dispute.

These Bibles—of which only about forty of the original three hundred copies believed to have been printed are known to exist—are extremely valuable as collectors’ items, and very large sums of money have been involved when one of the few remaining copies has changed hands.

Reference to the illustration from the *Mazarin Bible* (*see* Fig. 23) shows the heavy Gothic type in use at that time, which followed without any appreciable difference the

gatres: in cipitibus ab duxosolima.  
Eos autem istos etis horum. Et ego mit-  
tam promissum partis mei i vos: vos  
autem sedete in ciuitate. quo ad usq; indu-  
amini virtute regis alto. Eduxit autem eis  
foras in bethaniam: et eleuatis mani-  
bus suis benedixit eis. Et factum est dum  
benedicetur illis recessit ab eis: et ferreba-  
tur in celum. Et ipsi adorantes reges  
sunt in iherusalem cum gaudio ma-  
gno: et erant semper in templo lau-  
dantes et benedicentes deum. amen.

**I**ste est iohannes euange-  
lista unus ex discipulis domini:  
qui virgo a deo electus est:  
quem de nuptijs volentiam  
nubere vocauit deus. Cui virginitatem  
in hoc duplè testimonium datur in eu-  
angelio: quod et per certis dilectus a deo  
dicatur: et hunc matrem suam de cuncte com-  
mendauit dominus. ut virginem virgo serua-  
ret. Deinde manifestans in euangelio  
quod ipse incorruptibilis verbi opus  
inchoans. Solus verbū carnē factum  
esse. nec lumen a tenebris comprehensum  
fuisse testatur: primū signū ponens quod  
in nuptijs fecit dominus ostendens quod ipse  
erat. ut legentibus demonstraret quod ubi  
dominus invitatus sit deficeret nuptias vi-  
num debear: et veteribus immutatis.  
nova omnia que a christo instituuntur  
appareat. Hoc autem euangelium scripsit in  
asia. postea quod in patmos insula apo-  
calypsim scripsit: ut cui i principio ca-  
nonis incorruptibile principium pronotaret  
in genesi: et tamen incorruptibilis finis  
per virginem in apocalypsi reddaret dicere  
christo ego sum alpha et omega. Et hic est iohannes:  
qui sciens superuenisse diem re-  
cessus sui. Conuocans discipulis suis

in epheso. per multa signa experimenta-  
ta prius tribù descendens i defoliū  
sepulture sue locū facta oratione. po-  
scitus est ad partes suas: tam exterrit  
a dolore mortis quam a corruptione car-  
nis inuenitur alius. Tamen post o-  
mnes euangelium scripsit: et hoc virginū  
debetat. Quoq; tamē vel scriptor repa-  
ris dispositio. vel libroq; ordinatio ideo  
a nobis per singula non exponiatur:  
ut sciendi desiderio collato et queran-  
tibus fructus laboris: et deo magiste-  
ri doctrina securus. Expletus plog⁹  
scopit euangelium fidem iohannem.  
A principio erat verbū: et verbū erat  
apud deū: et deū erat verbū. Hoc erat  
in principio apud deū. Omnia per ipsum  
facta sunt: et sine ipso factum est nichil.  
Quod factū est in ipso vita erat: et vita  
erat lux hominū: et lux in tenebris lu-  
cer: et tenebre eā nō comprehendetur. Su-  
it ipmo missus a deo: cui nōmē erat ioh-  
annes. Hic venit i testimonium ut testi-  
moniū phibetur de lumine: ut omnes  
credent per illum. Nō erat ille lux: sed ut  
testimonium phibetur de lumine. Erat  
lux vera: que illuminat omnē homi-  
num venientem in hunc mundū. In mu-  
ndo erat: et mūndus per ipsum factus est: et  
mūndus eū non cognovit. Qui propria ve-  
nit: et sui eū nō receperūt. Quoq; autem  
recepit eū. dedit eis potestatem filios  
dei fieri: hijs qui credunt in nomine eius.  
Qui nō regit sanguinis neq; regit volun-  
tate carnis. neq; regit voluntate virtutis: sed  
regit deo nati sunt. Et verbū caro factum  
est: et habitavit in nobis. Et vidimus  
gloriā eius. gloriam quasi unigenita a  
parte: plenū gratia et veritatis. Iohan-  
nes testimonium phibet de ipso: et da-  
mag dicit. Hoc erat quē dixi: q; post  
me venturus est. ante me factus est:

FIG. 23.—A page from the Gutenberg Bible (reproduced here just under quarter area). A good example of *Textura* or *lettre de forme*.

characteristics of the manuscript hand in fifteenth-century Germany.

There were three very distinct variations of this letter form: (1) *Textura* (*lettre de forme*) or printed Gothic, as used for religious works (see Fig. 23); (2) *Round Gothic* (*rotunda* or *lettre de somme*) used for the printing of classical works, and (3) *Cursive Gothic* (*lettre bâtarde*) as used by the early English printers (see Fig. 24).

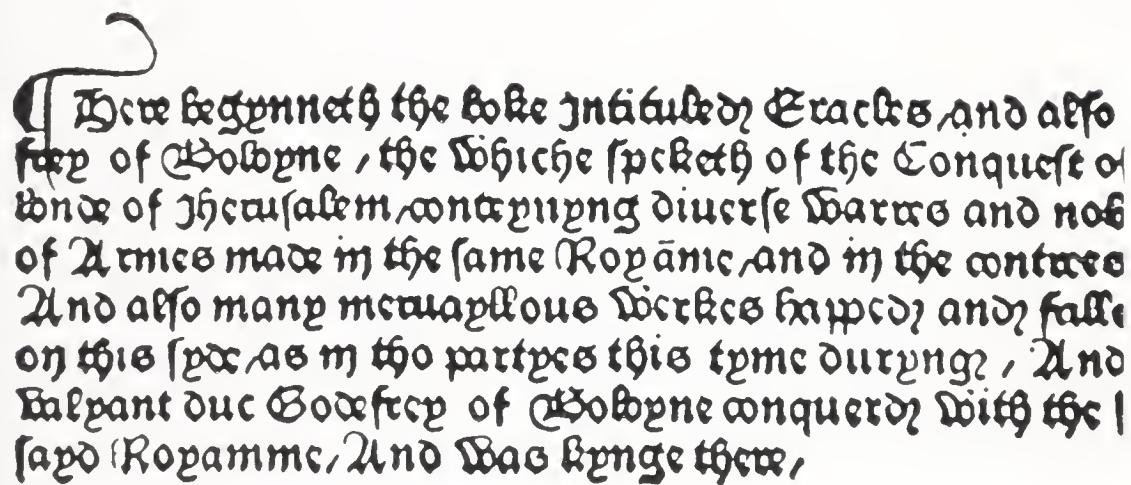


FIG. 24.—Cursive Gothic (*lettre bâtarde*). Reproduced from  
Caxton's *Heraclius, Emperor of the East*, printed in 1481.

For the next ten years or so there was very little attempt to create new type faces, and wherever the art and practice of printing was introduced so also was the “black letter” type. In the various countries of Europe, and even in England itself, the same Gothic type faces were employed until the Renaissance and the unearthing in Rome of numerous classical monuments and inscriptions. The scribes of that period were so inspired by the beauty of the works being brought to light that they sought out the old manuscripts written under the guidance of Alcuin at Tours towards the latter part of the eighth century. Using these texts as their inspiration, they copied the Carolingian script, from which was

developed the Neo-Caroline script—on which the first Roman type faces were eventually to be modelled.

### The First Roman Typefaces

The earliest known Roman type is credited to John da Spira, who, at Venice in 1469, used such a face for his *Letters of Cicero*.

However, it is to Conrad Sweynheim and Arnold Pannartz, two Germans who were printing at Subiaco, Italy, in 1465, that the distinction of introducing Transitional Gothic (the first break-away letter from a pure Gothic face) must be accorded (Fig. 25).

laomedon tea p̄na piuria. Ergo uerū est  
 q̄ Apollo acq̄ Neptunus eidem Laome-  
 dona mercēnariis operibus seruierunt.  
 Illis q̄ppe promisile mercedem falsumq̄  
 iurasse phibet. Miror Apollinem noīatū  
 diumatorem: in tanto opificio laborasse  
 nesciētem: q̄ Laomedon fuerat promissa

FIG. 25.—Unfinished Roman Letters from *Of the Realm of God*, printed by Sweynheim and Pannartz, Rome. 1467.

### Nicholas Jensen's Roman Letter

A skilled engraver and Master of the Royal Mint at Tours, Nicholas Jensen, the first non-German printer, was selected *circa* 1458 by King Charles VII of France to go to Germany as his emissary and study the new art of printing. After

gaining experience at Mainz and in the Monastery of Weidenbach, Jensen studied in Venice, where in 1470 he designed the well-known roman typeface for the printing of Cicero's *Epistolae ad Brutum*.

Influenced by the Neo-Caroline (or *littera antiqua*) minuscule—the hand developed by the scribes of the Renaissance period—Jensen cut his fine “white letter,” so-called because of its open and extremely legible letter forms. This gave to the printed page a lighter appearance, in contradistinction to the “black letter” types.

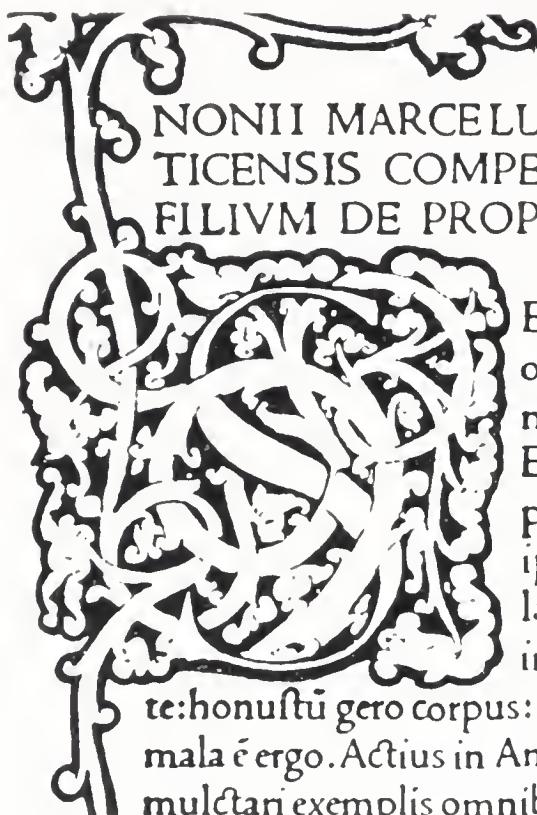
Though Jensen's type lined more accurately and was more regular in form than any that had previously been cast, the individual characters of this “old style” alphabet are remarkable for little beyond their proportion, yet their composite value cannot be over-estimated.

The superiority of Jensen's letter over previous Roman typefaces establishes him firmly in the forefront of the early type designers, and his name is remembered and perpetuated to this day by such typefaces as Monotype Veronese (see Fig. 26 and p. 84), Cloister Old Style, Ludlow's Nicholas Jensen, Monotype Centaur (see p. 72), and many others based on his original designs.

### The Roman of Aldus Pius Manutius

Born at Sermoneta in 1449, Aldus Manutius settled in Venice, where he acquired the press of Nicholas Jensen, which had passed to Andrea d'Asola after his death in 1480.

Aldus (the name by which he is most widely known) was filled with the desire to print the finest examples of Greek literature, and in 1495 he issued the first volume of Aristotle's works, which were followed by Herodotus, Sophocles, and other Greek authors. These works introduced



ENIVM EST TEDIVM ET  
odiū dictū a senectute: q̄ senes om  
nibus odio sint & tedio. Cacilius in  
Ephestione: Tū i senectute hoc de  
puto miserrimū sentire ea x̄tate: eū  
ipsū esse odiosū alteri. Nā x̄tatē ma  
lā senectutē ueteres dixerūt. Plautus  
in Menachmis: Cōsitus sū senectu  
te: honustū gero corpus: uires r̄liquere: ut x̄tas mala ē: mors  
mala ē ergo. Actius in Amphitri. An mala x̄tate mauis male  
multari exemplis omnibus: Turpilius i Philopatro: Mise-

FIG. 26.—The Roman typeface of Nicholas Jensen, from Cicero's *Epistolae ad Brutum*, 1479.

to the world a new and more elegant type than that of Jensen. Cut by Francesco Griffó, this type was used in Pietro Bembo's *De Aetna* in 1495 (from which Monotype Bembo Series 270 derives its name—see p. 69). “Old Face” is the correct name for the typefaces derived from this elegant and dignified letter form (see Fig. 27).

The Monotype Corporation have issued two versions of this letter: Bembo, as already mentioned, and prior to that, Poliphilus. The latter is the nearer facsimile of the original face and, as with the version produced by Garamond in 1531, embodies the oblique stress on rounded strokes, the squared top to the capital A, and the failure of the bowl of the capital P to link up completely at the lower end.

Before leaving the fifteenth century it is necessary to clear

NARRA QVIVI LA DIVA POLIA LA NOBILE ET  
ANTIQA ORIGINE SVA. ET COMO PER LI PREDE  
CESSORIS VITRIVSIO FVE EDIFICATO. ET DI QVEL  
LA GENTE LELIA ORIVNDA. ET PER QVALE MO-  
DO DISAVEDVTA ET INSCIA DISCONCIAMENTE  
SE INAMOROE DI LEI IL SVO DILECTO POLIPHILO.

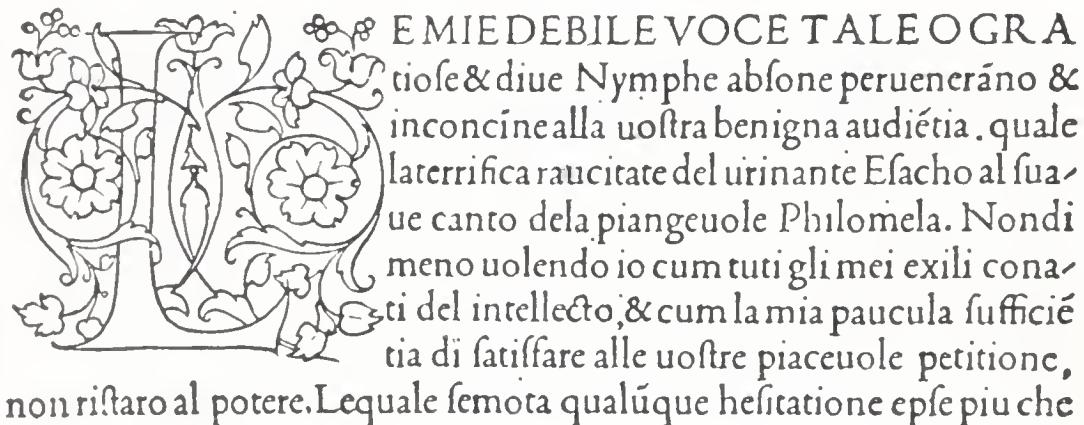


FIG. 27.—Roman Letters of the Renaissance. *Dream of Poliphilus*, printed by Aldus Pius Manutius, Venice 1499. Note the resemblance to Monotype Bembo and Poliphilus.

up one particular aspect, and that is in respect of William Caxton. In the year 1476 he was the first person to establish a printing business in England, after receiving his training from Colard Mansion, a calligrapher and printer of Bruges. But Caxton was *not* a designer. The lower-case types he used were modelled upon those of Fust and Schöeffer, but the capitals were of Flemish character.

England is the only country to receive the art for the first time from one of its own countrymen (Caxton), with the first book printed in the language of that country. His most famous works are: *Dictes and Sayinges of Phylosophres*, *Recuyell of the Historyes of Troye*, *Confessio Amantis*, *Golden Legend*, and *The Canterbury Tales*.

## THE SIXTEENTH CENTURY

## The Italic of Aldus Pius Manutius

The name of Aldus is traditionally linked with the invention of italic type—the first such face being issued at the turn of the sixteenth century—in 1501. The italic, as with his earlier roman, was cut by Francesco Griffio, who is reputed to have copied it from the handwriting of the poet Petrarch.

Aldus cast six different sizes of this italic, but it is perhaps not generally realised that this was a lower-case alphabet only—the capitals remaining erect and coming from the roman cases (Fig. 28).

*V i superum, sœuæ memorem Iunonis ob iram.  
M ulta quoq; et bello passus, dum conderet urben  
I nferretq; deos Latio, genus unde latinum,  
A lbaniq; patres, atque altæ mœnia Romæ.  
M usamhi causas memora, quo numine læso,  
Quid ue dolens regina decum tot uoluere casus  
I nsig nem pietate uirum, tot adire labores  
I mpulerit tantæ ne animis cœlestibus rræ?*

FIG. 28.—The italic of Aldus Pius Manutius. Note the upright roman capitals.

Unlike the present-day use of italic typefaces, which is invariably to emphasise or draw attention to one particular word or sentence, Aldus printed entire books in italic. The condensed nature of the characters permitted cheaper editions to be produced due to the reduction in the number of pages required.

*tutte le cose ue se metteno, excetto quelle che necessarie sono , onde bisogna che tu t'armi o che tu stia tacito e paciente. E SO. Io faro l'uno e l'altro, che ne toche a mi. V na uolta ando a mercato un Cuoco, e molti denari spese in busie di*

FIG. 29.—Ludovico Arrighi's italic typeface of the mid-sixteenth century.

### The Italic of Ludovico Arrighi

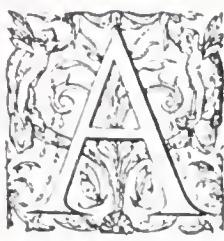
In 1527, just twenty-six years after Aldus issued his first italic types, Ludovico Arrighi brought out a new and far superior italic (Fig. 29). As with the previous versions, however, there were still no capital letters, the fount remaining completely lower-case. Italic capital letters were eventually introduced at Lyons in 1560.

Modern versions of this italic include: Monotype Arrighi (the Chancery italic used with Centaur), which was designed by Frederic Warde; Bembo italic, and Blado (the matching italic of Poliphilus) named after Antonio Blado of Rome, who used the original in 1539 for *Vito Sfortiae*.

### The Roman Types of Claude Garamond

Born in France in 1480, Garamond, who was apprenticed to Geofroy Tory (who raised the prestige of French typography), started his own type-foundry *circa* 1535 and in 1540 cut the first complete series (or family) of a magnificent roman typeface.

In association with Robert Granjon, he supplied type



NTONIVS Perrenotus, S.R.C.tit. Sancti Petri ad Vincula Presbyter, Cardinalis de Granuela, prefata Regiae & Catholicae Maiestatis à consiliis status, & in hoc Regno locum tenens, & Capitaneus generalis, &c. Mag<sup>co</sup> viro Christophoro Plantino, cui Antuerpiensi, & prefatae Catholicae Maiestatis Prototypographo fidei Regio, dilecto, gratiam Regiam & bonam voluntatem. Cùm ex præ-

FIG. 30.—The Roman typeface cut in 1540 by Claude Garamond.

punches to Cristophe Plantin of Antwerp (*see* Fig. 30 and p. 80). His precise and elegant types soon became famous throughout the Continent, and by the end of the sixteenth century had been brought to England by John Day. Monotype Garamond Series 156, cut in 1922 (*see* p. 74), is actually based on a face cut in 1621 by Jean Jannon, whose types eventually became the property of the National Printing Office of France. Revived in the nineteenth century, these types were incorrectly attributed to Garamond.

### The Anglo-Saxon Type of John Day

Born at Dunwich, Suffolk in 1522, John Day was one of the first Englishmen to practice the art of typography in Britain. He began business *circa* 1546 in St. Sepulchre's parish, London, at the sign of the Resurrection, and was for a while in partnership with William Seres.

Queen Mary I had him imprisoned, and he later took refuge on the Continent, returning to England during the reign of Queen Elizabeth I. He was the first printer to cut and cast Anglo-Saxon characters and under the patronage of the Archbishop of Canterbury he produced numerous fine books.

Aptly called "the Plantin of old English typographers," he died in 1584, having followed the occupation of a printer for over forty years.

As with William Caxton in the fifteenth century, so we

cannot take leave of the sixteenth without making fuller mention of Christophe Plantin. Born in 1514 at Saint Avertin, near the city of Tours, he settled as a bookbinder in Antwerp in 1549. In 1555 he commenced a printing business and in 1563 established a type-foundry in connection with his press.

Although he made Antwerp a centre of printing, his printing types were mostly obtained from France, and his work therefore reflected more the characteristics of that country than of the Netherlands. In 1876, nearly three hundred years after his death in 1589, the town of Antwerp acquired the premises he had used and turned them into the *Musée Plantin*.

Issued in 1913, Monotype Plantin Series 110 is based on one of the founts used in Plantin's *Index Characterum* of 1576.

#### THE SEVENTEENTH CENTURY

The beginning of the seventeenth century saw the end, for all practical purposes, of manuscript writing. Previously the art of illuminating had survived due to the inability of printers to supply the enormous service-books which were in so much demand by the Churches.

Curiously enough, with the art of printing now firmly established, the seventeenth century is a rather dull period in the history of type and type designers; only the following items are worthy of note.

#### The Roman of Anton Janson

Born in 1620, Anton Janson was a punch-cutter and type-founder in Leipzig from 1668 until his death in 1687. He created the typeface which now bears his name—Linotype Janson being a modern recutting from the original matrices now in the Stempel Foundry at Frankfurt.

### The Variant of Christopher Van Dyck

Christopher Van Dyck, one of the finest Dutch type designers of the seventeenth century, based his variation of the Aldine Roman on the series cut by Claude Garamond in 1535.

The letters follow very closely those cut by Garamond, except that there is somewhat more contrast between the thick and thin strokes and the entire alphabet, both upper and lower-case, displays a slightly wider set width. Issued in 1660, Van Dyck's types were widely used in Europe and were also imported into England. One set of these original punches is now preserved at the Enschedé Foundry, Amsterdam.

As evidence of the statements made in the foregoing pages regarding the import of Dutch types to England during the sixteenth and seventeenth centuries, it is established that Dr. John Fell, Bishop of Oxford and Dean of Christ Church, obtained some of these type punches and bequeathed them to Oxford University between 1670 and 1686.

These punches were not, unfortunately, the work of Van Dyck but of his contemporaries the Voskens Brothers, who, though not as good as Van Dyck, were nevertheless notable engravers and typefounders.

The Oxford University Press still retains these punches, from which type is occasionally cast and only a few years ago was used to print *The Oxford Book of English Verse*.

### THE EIGHTEENTH CENTURY

Following the uneventful years of the 1600s, the eighteenth century began with typefounding in both England and the Continent at probably its most insignificant level.

The traditions of beauty and elegance of the fifteenth-

century designs had degenerated to their lowest ebb, and in England the art of typefounding was almost non-existent. Fortunately, the turn of the century also heralded a new era in type design and a new pride in craftsmanship.

### The English (Roman) of William Caslon

England is indebted to William Caslon, born at Halesowen, Worcestershire, in 1692, for the revival of her independence in the art of punch-cutting and letter founding.

Apprenticed in London to the trade of an engraver of gunlocks and barrels, he commenced his business of silver-chasing in 1716; later he turned his attention to the cutting of tools for bookbinders. In 1720 he started his own typefoundry, where his first achievement was the cutting of a fount of Arabic for the Society for Promoting Christian Knowledge and used in an Arabic Psalter published at London five years later.

Caslon is most famous for the fine fount of English (roman) he cut in 1722; but it was not until 1734 that he issued his first type specimen sheet. His "old face" types were extensively used in England throughout the eighteenth century and became so famous that they surpassed not only the existing types of his own countrymen but even those of the Continent, where the new English typeface became extremely popular, thus reversing the previous trend in typeface design.

His letter foundry, continued by his son William Caslon II following his death in 1766, remained in the family until the death of Henry William Caslon in 1874. Today it forms a part of Stephenson, Blake & Co. Ltd. of Sheffield (*see Fig. 31*).

Modern versions of this face include Monotype Caslon Series 128 (*see p. 71*) and Monotype Imprint (*see p. 76*).

## GREAT PRIMER ROMAN.

Quousque tandem abutêre, Catilina, patientia nostra? quamdiu nos etiam furor iste tuus eludet? quem ad finem se se effrenata ja<sup>c</sup>tabit audacia? nihilne te nocturnum præsidium palatii, nihil urbis vigiliæ, nihil timor populi, nihil con-

**A B C D E F G H I J K L M N O P Q R S**

FIG. 31.—The English (Roman) of William Caslon, reproduced actual size from a facsimile of his first Specimen Sheet of 1734.

### The New Type of John Baskerville

Another great English type-cutter of this period, John Baskerville, was born in 1706 at Wolverley in Worcestershire, only a few miles from Caslon's birthplace.

At the age of twenty he became a writing master at Birmingham, but his interest in calligraphy and stone-cutting led to experiments in type-founding about the year 1750. So assiduous was he in this new venture that he spent over six years perfecting his production before introducing it to the general public (Fig. 32).

A transitional face, his letters were neither “old face” nor “modern.” There was a greater difference between the weight of the thick and thin strokes of the characters than in other types of the same period and, while the serifs on lower-case ascenders were still slightly oblique and bracketed as in “old face,” the rounded characters exhibited the vertical bias of “modern” types.

Baskerville started a printing business and produced his first book, the *Magnum Opus*, a quarto edition of *Virgil*, on

Tum sic expirans Accam ex æquali  
Alloquitur; fida ante alias quæ sol  
Quicum partiri curas; atque hæc i  
Haðenus, Acca foror, potui: nun  
Conficit, ac tenebris nigrescunt om  
Effuge, et hæc Turno mandata nov

FIG. 32.—John Baskerville's typeface of the late eighteenth century.

which he spared neither trouble nor expense. The superior craftsmanship and elegance of this work received widespread acclaim, and established his fame as a typographer. Though experiencing much opposition and certain set-backs during his life, he was nevertheless worth £12,000 when he died in 1775.

The original punches cut by Baskerville still exist and are preserved at the Cambridge University Press, to whom they were presented by the French type-foundries of Derberny and Peignot.

Monotype Baskerville Series 169 is one of the most popular book faces of the present day (*see p. 67*). Issued by the Corporation in 1923, it is a revival of Baskerville's type of 1760.

#### The Type of Grandjean de Fuchet

Half-way through the seventeenth century Louis XIV of France agreed to a suggestion that a type should be designed for the sole use of the Imprimerie Royale (the National Printing Office of France), founded in 1640 by Cardinal Richelieu.

The new face, called *Romains du Roi* (or King's roman) was created by the skilled punch-cutter, Grandjean de Fuchet, in 1702.

An unusual aspect of this face was the protrusion of the serif on both sides of the ascenders of the lower-case characters b, d, h, and l. The capitals were made equal in height to the lower-case ascenders, and the oblique stress (so characteristic of "old face" types) was replaced by a vertical emphasis.

### The "Transitional" Roman of Pierre Simon Fournier-le-Jeune

Fournier's father, Jean Claude Fournier, was manager of the Le Bé foundry in which he was employed. On the death of his father he relinquished his post to study painting and design. In 1739, at the age of twenty-seven, he started his own type-foundry. The type he introduced was the first of the *transitional* types and a continuation of the experiments of Grandjean to create letter forms which did not rely on calligraphic features for their design.

A modern revival of this typeface is Monotype Fournier Series 185, cut in 1925 (see p. 73).

Pierre Simon Fournier is also renowned for his invention of the Point System, which he introduced in 1737.

### The "Modern" Face of Giambattista Bodoni

The son of a printer, Giambattista Bodoni was born in 1740 at Saluzzo in Sardinia and was taught the compositor's art. In 1768, when only twenty-eight years old, he settled in Parma at the request of the Infant Don Ferdinand (later Duke of Parma) and there took charge of the Stamperia Reale.

In 1780 Bodoni introduced an entirely new typeface and in 1818, five years after his death, his widow published his *Manuale Tipografico*, which exists as a lasting memorial to his skill as a typographer.

Though a very legible type, Bodoni is nevertheless lacking in artistic value because of its monotonous regularity. The first “modern” face, its immediate recognition lies almost entirely in the extreme contrast of weights between the thick and thin strokes—this, unfortunately, tends to weaken the letter construction and destroys the aesthetic appearance of the alphabet when considered in its entirety (*see* Fig. 33 and p. 70).

sidium Palatii. nihil urbis. vigiliae,  
nihil timor populi, nihil concursus  
bonorum omnium, nihil hic muni-  
tissimus habendi senatus locus. nihil  
horum ora. vultusque moverunt? Pa-  
tēre tua consilia non sentis? constri-

FIG. 33.—The first “Modern” typeface, introduced by Giambattista Bodoni in 1780.

### The “Modern” Face of Richard Austin

In 1788 John Bell, a printer and publisher, visited France, where he was inspired by the types of Grandjean and Fournier. Returning to England, he founded the Bell and Stephenson British Letter Foundry and took as his punch-cutter a person by the name of Richard Austin.

Austin discarded the long “s” from his alphabet designs and introduced lining figures in place of the old non-lining style.

Monotype Bell Series 341 is a revival cut by the Corporation in 1931 (*see p. 68*). In America the face was revived by Mr. Bruce Rogers and given the name of *Brimmer*.

The original type punches are in the possession of the Caslon Letter Foundry (Stephenson, Blake & Co. Ltd.), Sheffield.

#### THE NINETEENTH CENTURY

The industrial revolution, the introduction of various forms of motive power to drive the new cylinder presses being invented, and the steady flow of machine-made paper should have made the nineteenth century one of the most remarkable eras in the history of printing.

Unfortunately, it is remarkable only for the typographic monstrosities it saw fit to foster on the misguided public, who presumably must have acquired a taste for these vulgar concoctions.

It is interesting, therefore, to read the works of the more discriminating authors of that period and to see what they thought of the new type designs. The following extract is from a book published in 1895 and written by E. F. Strange of the South Kensington Museum.

“Letters were trebled and quadrupled, their straight lines worried into zig-zags, or pitted with diamond-shaped or circular spots; while their curves were either unreasonably squared, or distorted and involuted even unto absurdity. Then the writing-masters fell upon the ‘open letter’: they filled it with ignorant shading and ridiculous diapers. It was conceived as a solid, in order that it should possess a meaningless shadow; and drawn in reputed perspective, that it might have the appearance of not belonging to its proper place. And in endless variety, all

these forms have been multiplied and perpetuated by being cut in type. The specimen-book of the 'Imprensa Nacional' (1870) at Lisbon, contains some of the worst specimens we have ever seen; and, indeed, in its several hundred pages will be found fewer good letters than would seem conceivable for any modern work, with the authority of a nation behind it."

In the midst of such distasteful designs, if indeed that is the correct word for these typographical absurdities, only one person is worthy of note—Justus Erich Walbaum.

#### The Type of Justus Erich Walbaum

Born in 1768, Walbaum, the son of a clergyman, took up the trade of a confectioner, but later turned his attention to the engraving and casting of metals. In 1798 he started his own type-foundry at Goslar, and in 1802 opened a branch at Weimar.

His types followed very closely the designs of Bodoni and Firmin Didot. Today these types are perpetuated in Monotype Walbaum Series 374 (*see Fig. 34 and p. 85*). Introduced into Britain in 1925 by the Curwen Press, this face was cut by the Monotype Corporation in 1934.

Ego multos homines excellenti animo ac virtute fuisse,  
et sine doctrina, naturae ipsius  
habitu prope divino, per seip-  
sos et moderatos, et graves ex-

FIG. 34.—Monotype Walbaum Series 374 based on the designs of Justus Erich Walbaum created at the beginning of the nineteenth century.

Walbaum's original punches passed into the hands of J. F. Brockhaus of Leipzig, to whom he sold his business in 1838, only one year prior to his death. These punches are now the property of the Berthold foundry, by whom they were acquired in 1919.

### The Private Press Movement

Despite what has been said above with regard to the desert of printing standards in the nineteenth century, small oases of good typography and design were created by the private presses. In 1843 Charles Whittingham of the Chiswick Press obtained a fount of Great Primer (approximately 18-point) from the William Caslon of that period, cast from the original matrices, and from which was printed *Lady Willoughby's Diary*. The success of this experiment led to a demand for other sizes of similar typefaces, and in 1850 Messrs. Millar and Richard of Edinburgh undertook the production of a fine and complete series known as "Old Style." Cast by Alexander Phemister (one of their employees), this face met with immediate success and was widely copied by other type-founders (*see p. 78*).

However, repulsed by the general standard of printing being produced at that time, certain individuals founded their own, private presses. The Daniel Press of the mid-nineteenth century was one of the forerunners of this movement, but perhaps the most notable was the Kelmscott Press, founded in 1891 at Upper Mall, Hammersmith, by William Morris.

A well-known poet and designer, he started by thoroughly examining the conditions as to ink, paper, and press work under which the fifteenth-century printers produced their wonderful masterpieces.

Noting that these early books and manuscripts "were

always beautiful by force of the mere typography, even without the added ornament with which many of them are lavishly supplied," he set himself the task of equalling them.

To this end, he revived as far as was practicable, the old methods, rather than adopting modern techniques. He designed two type faces—a roman called the "Golden" type and based on the 1470 letter created by Nicholas Jensen—which William Morris first used in the *Golden Legend*. A heavy slab-serifed face, it tended towards the Gothic to which he was particularly inclined. His other typeface, the "Chaucer" type (so called after the work in which it was used), was a round Gothic. To these two faces he eventually added a larger form of the Gothic called the "Troy" type.

His artistic bias led Morris to abhor the use of mechanical processes, and printing at the Kelmscott Press was performed entirely by hand labour on hand-made paper produced from German hand-woven linen of uniform quality.

Though many of his works were lavishly illustrated and somewhat over-adorned, they nevertheless conformed to a generous format of wide margins and carefully determined proportions. In the art of printing he revived the love and attention to detail so reminiscent of the early masters who had gone before, and did much to awaken printing from the state into which it had fallen.

The Kelmscott Press was in existence for only six years, closing down the year following the death of William Morris in 1896.

During this brief period of time, however, William Morris had instilled into many of his contemporaries a new interest in the art of printing—an interest and pride in craftsmanship which spread throughout Britain and the Continent.

Two other private presses of that period which did much for modern bookwork were the Ashendene Press, founded

in 1894 by St. John Hornby, and the Doves Press, which was started by Cobden-Sanderson and Emery Walker in 1900.

The work of Edward Johnston in his *Writing and Illuminating and Lettering* was also of very great importance at that time, and has been the inspiration and reference book of numerous typographers ever since.

#### THE TWENTIETH CENTURY

##### The Types of Eric Rowland Gill

Born in Brighton in 1882, Eric Gill became a wood engraver, stone carver, draughtsman, and type designer.

In 1927 the Monotype Corporation issued Gill Sans Series 262 from an alphabet conceived by Gill. This sans-serif (titling) face was based on a set of letters designed by Edward Johnston for the use of the London Underground Company on their vehicles and station signs. This face was soon being produced in a variety of weights and sizes, and a lower-case alphabet was also introduced (*see p. 75*).

Gill was also the designer of such well-known typefaces as Perpetua (*see p. 79*), Felicity (the Perpetua italic), and Joanna. Pilgrim is the Linotype version of his Perpetua.

His early death in 1940 at the age of fifty-eight undoubtedly robbed this century of one of its most skilled and respected designers.

##### Times New Roman by Stanley Morison

One of the most widely used types of the present day, Times New Roman (*see p. 83*) was designed by Stanley Morison following a request from *The Times* for a typeface satisfactory for the needs of newspaper letterpress rotary printing.

The new type was first used by *The Times* on October 3rd, 1932, and was released to the printing trade generally the

following year. Until quite recently more books throughout the world were printed in this face than in any other type.

### Jan van Krimpen's Types

Born at Gouda in 1892, Jan van Krimpen studied at the Academy of Art in the Hague, where he became interested in calligraphy, lettering, and type design. His recognition as a type designer followed the issue in 1923 of the commemorative Dutch postage stamps on the occasion of Queen Wilhelmina's silver jubilee—for which he designed the lettering.

Approached by type-foundry Enschedé-en-Zonen, at Haarlem, he designed for them such typefaces as Lutetia, Romulus, Romanée, Van Dyck, and Cancelleresca Bastarda.

Monotype Lutetia Series 255 was cut in England in 1926, and Spectrum (another of his designs) was cut by the Monotype Corporation in 1955.

### Frederic William Goudy

This noteworthy American printer and type designer created over one hundred different typefaces during his lifetime. His interest in typography is said to have arisen during his employment in a Chicago bookshop. In 1895 he established the Pamphlet Press (later called the Camelot Press) in Chicago, and in 1903 set up the Village Press at Park Ridge.

Among his best-known type designs are Kennerley, Forum, and, of course, Goudy. Other lesser-known faces designed by him are Deepdene, Goudy Italian, Goudy Text, and Hadriano.

Appointed lecturer in type design at Syracuse University in 1940, William Goudy died but seven years later at the age of eighty-two.

The first half of this, the twentieth century, has given us many new and original type designs from the hands of skilled

craftsmen. We can but hope that the second half of the century will be as fruitful as the first, and that the printing industry as a whole will maintain and improve its standards in keeping with the efficient and well-designed equipment now at its disposal.

#### STUDY QUESTIONS

1. Explain the meaning of the term *incunabula* and, if possible, find a suitable illustration to accompany your answer.
2. Why is the Mazarin Bible so called and who is reputed to have printed this work?
3. In what year, and by whom, was the first Roman typeface used? Also name the persons responsible for the first *Transitional Gothic* as distinct from the true Gothic characters.
4. Who was Nicholas Jensen, and why was his famous “white letter” so named?
5. Monotype Bembo is a well-known book face at the present time, but can you trace its origin and, in so doing, discover who originated the first italic type?
6. Place in their correct chronological order the names of the following type designers: Anton Janson, Aldus Pius Manutius, Stanley Morison, William Caslon, Giambattista Bodoni, and John Baskerville.
7. What do you understand by the Private Press Movement, and what prompted its inception?
8. Name two Private Presses founded during the late nineteenth century, and by whom.
9. Who was William Morris and for what is he mostly remembered?
10. Describe as fully as possible the life of Eric Gill. Though not mentioned in this book, there was a distinct reason underlying the names he chose for certain of his type designs. Can you discover this reason and name at least one type to which it applies?
11. We often refer to the word typography, but what is meant by the word *xylography*?

*Section II*

*Type Recognition and  
Reproduction*



## CHAPTER FOUR

# TYPE IDENTIFICATION AND CLASSIFICATION

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THE identification of a typeface depends on one's knowledge of the design and construction of the characters in that alphabet; this can present an almost overwhelming task in the mental cataloguing and indexing of thousands of type characters and their own identifying peculiarities.

However, it is fortunately not necessary to commit to memory the particular peculiarities of a typeface to be able to recognise it. Just as it is possible to know a friend without a conscious summing-up of his facial characteristics, so also is it possible to recognise a typeface without necessarily being able to point to even one identifying feature.

Although therefore some points of identification are given in Chapters Five and Six, it must be explained that it is far better to be able to recognise typefaces at a glance without recourse to detailed type specimen sheets or by the analysis of their individual characteristics.

### X-HEIGHT

Having considered the fact that there are numerous different typefaces, it is also necessary to appreciate that each of these faces is cast in various sizes, ranging in general from 6 point to 14 point for text matter, and 18 point to 72 point for display work. Typefaces larger than 72 point (usually made of wood) are used in the main for poster work; these types are referred to as being 8-line, 10-line, and so forth,

indicating the number of 12-point ems that the body depth occupies.

It is not always possible to be specific when assessing the body size of a particular typeface due to the variation in x-height (the depth of the lower-case letter having neither ascenders nor descenders) of different type families (Fig. 35).

To illustrate this point the following lines, each set in 12-point type, are worthy of attention:

PERPETUA	abcdefghijklmnpqrstuvwxyz
BEMBO	abcdefghijklmnpqrstuvwxyz
GILL SANS	abcdefghijklmnpqrstuvwxyz
TIMES	abcdefghijklmnpqrstuvwxyz
CONSORT	abcdefghijklmnpqrstuvwxyz
<b>ADONIS</b>	<b>abcdefghijklmnpqr</b>

FIG. 35.—Comparison of x-height between various typefaces cast on the same body size.

When setting text matter with a typeface having a large x-height it is invariably advisable to include leading (or whitespace) between each line to facilitate reading and prevent the page from appearing too heavy. In the case of type having a smallish x-height, the space left to accommodate the long ascenders and descenders will provide sufficient white space between the lines without the need for extra leading.

#### CHRONOLOGICAL TYPE CLASSIFICATION

In Chapter Three we considered the evolution of type design from the middle of the fifteenth century until the middle of this, the twentieth century, and during this five-hundred year period gave mention to five separate type divisions as follows:

1. *Venetian*: influenced by fifteenth-century types
2. *Old Style*: influenced by sixteenth-, seventeenth-, and eighteenth-century types
3. *Transitional*: influenced by eighteenth-century types
4. *Modern*: influenced by eighteenth- and nineteenth-century types
5. *Contemporary*: twentieth-century typefaces.

To these five classifications must be added two more headings (6) *Egyptian* and (7) *Decorative*—to cover the types which do not fall into any of the previous categories.

#### OLD STYLE AND MODERN

One of the most confusing aspects confronting many students appears to be the ability to differentiate between Old Style and Modern typefaces.

##### Old Style

In Old Style typefaces the serifs are reasonably heavy and bracketed to the main strokes; there is but little contrast between the thick and thin strokes, and the wing serifs (those at the ends of the horizontal strokes of the letters E, F, L, T, and Z) are set at an angle.

The type known as Old Style was introduced during the latter part of the nineteenth century and was a nondescript of no particular lineage. One distinguishing feature of this face is the vertical stress on the rounded characters—also evidenced in Modern typefaces.

##### Old Face

Old Face (*see* Fig. 36); as distinct from Old Style, embraces many typefaces which are reproductions of beautiful letters created by the early masters and first used by Aldus in 1495.

These faces can be identified by the oblique stress on the rounded characters; the lower-case a and e are rather narrow and the capitals are noticeably lower than the ascenders. The capital J in Old Face italic is almost identical with an inverted £ sign.

### Modern

Modern (*see* Fig. 37) differs in many respects from Old Style, but the rounded characters have a similar vertical stress. The thin horizontal serifs are very seldom bracketed, the wing serifs are set at right angles to the horizontals, and there is a very distinct contrast between the light and heavy strokes.

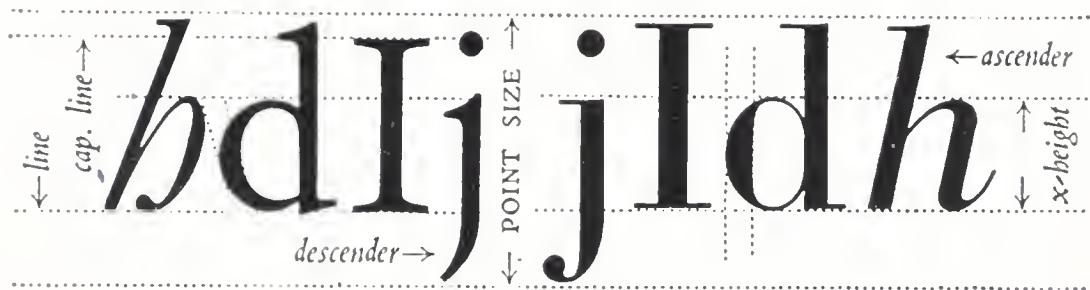


FIG. 36.—Old Face: first used by Aldus in 1495. Note the bias thickening; the capitals lower than ascenders, etc.

FIG. 37.—Modern: note the heavy verticals and fine serifs. Invented in France in 1689, this style was perfected *circa* 1785.

### Transitional (*see* Fig. 38)

This term is applied to the typefaces modelled on the beautiful round roman introduced by John Baskerville in 1751, and embraces such well-known types as Bell, Fournier, Walbaum, and many others. Identification, however, proves somewhat difficult, as individual faces may exhibit characteristics of more than one group.

### Venetian (see Fig. 39)

This is the name given to typefaces modelled on the pre-Aldine roman used by Nicholas Jensen in Venice *circa* 1470. Centaur, Cloister, Venezia, and Veronese are modern revivals of this famous letter. Among its most distinguishing features are the diamond-shaped full points and the lack of contrast between the thick and thin strokes.



FIG. 38.—Transitional: John Baskerville's types of 1751 foreshadowed the "Modern" design of 1785.

FIG. 39.—Venetian: Centaur (above) is modelled on the roman of Nicholas Jensen of Venice in 1470.

### Egyptian

Egyptian is the name reserved for typefaces such as Beton, Karnak, Rockwell, Scarab, etc. This group is readily identified by the slab serifs (see Fig. 40) and monotone character of the alphabet; there being little variation between the major and minor strokes.



FIG. 40.—Rockwell Medium: a typical slab serifed typeface.

## Decorative Typefaces

These cannot be classified under any one specific group, as they embrace the enormous range of beautiful (and ghastly) designs covering such typefaces as Goudy Text, Marina Script, Fry's Ornamented, Union Pearl, and so forth. Modern decorative types, on the whole, are well designed and eminently suited for display composition. Unfortunately, as already stated, the same cannot be said for many of the display types produced during the nineteenth century.

## Contemporary Typefaces

This category naturally includes all the classification groups already mentioned (Old Face, Modern, Decorative, and so on) appearing during the past few years. Perhaps the most famous "contemporary" face is Gill Sans Serif. This clean, easily read alphabet (*see p. 75*), designed by Eric Gill, is entirely devoid of serifs (hence its name). It is not, however, simply an alphabet denuded of its serifs, but one in which all strokes *appear* to be of equal thickness. Gill Sans is easily identified by the normal roman forms of the letters a, g, and t; and the famous Gill capital R.

By reference to the illustrations in this chapter attempt to classify the various typefaces with which you are already familiar, and then try classifying the numerous types shown in the next Section.

## STUDY QUESTIONS

1. What is meant by the term x-height? Accompany your answer with a neat diagram.
2. Name the distinguishing features of a Venetian typeface.
3. Name at least three typefaces which can be described as "Modern" and explain how they can be so identified.

4. In what way do the serifs of Old Style, Modern, and Egyptian typefaces differ? Prove your answer with neat illustrations.

5. Name three decorative contemporary typefaces not mentioned in this book and provide samples of those you select.

## CHAPTER FIVE

# AN ANALYSIS OF “BOOK” FOUNTS

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**A**LTHOUGH a very necessary feature of any book on this subject, the inclusion of a selection of “text” or “book” typefaces nevertheless presents a number of problems. Obviously, to include every face available would require a veritable tome devoted to that one topic, and the average student would be over-awed and bewildered by the impressive and varied collection. Bearing these facts in mind, it has been decided to include only the twenty or so most popular faces in general use at the present time; a few faces used for general setting are also shown.

A brief history of each typeface; its main points of identification and suitability as to subject matter, paper surface, and so forth precedes three short paragraphs in the type concerned, set in 12, 11, and 10 point respectively. For general notes on suitability of type to paper see Chapter Eight.

Reference to these specimen settings will assist the reader in judging the weight of the respective typefaces when seen in mass; to assess their suitability or otherwise to the mood or vein of the book to be produced; and to estimate the number of words that will be contained in a given area.

Slug-set versions (Linotype, Intertype) of many of the faces shown in this chapter are also produced, and faces especially designed for line setting have been introduced by the companies concerned. It is usually admitted, that slug-set typefaces are inferior aesthetically due to lack of kerning and a certain necessary increase in inter-character spacing.

## BASKERVILLE

One of the most popular book faces in use today, Baskerville Old Face (the first of the English transitional romans) was originally cut *circa* 1760; the present Monotype version being introduced in 1923.

This face may be identified by the unclosed tail and curled ear of the lower-case g; the flat curves on the top of the small a and f, and on the lower curves of the lower- and upper-case J. The tail of the g is closed in the Linotype version issued in 1931.

Baskerville italic may be identified by the swash capital letters K, N, T, Y, and the J, which resembles a £ inverted.

### *Specimen settings of Baskerville*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get him-

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## BELL

The first of the English “modern” faces, this design (influenced by the then new romans of Grandjean de Fuchet and Firmin Didot) was cut in 1788 by Richard Austin. The original punches are now held by Stephenson, Blake & Co. Ltd., Sheffield.

The Monotype version of this typically English typeface was cut in 1931.

Note the extra large eye of the lower-case e; the flat, sharp, bracketed serifs; the vertical emphasis to the rounded characters, and the general openness of the entire alphabet.

*Specimen settings of Bell*

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## BEMBO

This elegant and graceful face was originally cut by Francesco Griffó for Aldus Manutius of Venice in 1495.

The 1929 Monotype revival of that Aldine roman, Bembo (typical of all true Old Face alphabets) has capital letters which are smaller than the lower-case ascenders.

Aids to recognition are the small x-height; narrow "set" width; exaggerated top curve to the lower-case f; and the almost swash tail of the capital R. In the italic founts the bowl of the capital P does not link up at the lower end. An alternative capital R is now available without swash tail.

### *Specimen settings of Bembo*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get himself into the meaning of the *Author*, and

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## BODONI

Created in Italy by Giambattista Bodoni in the late eighteenth century, this was the first of the “modern” typefaces.

There is a distinct contrast in weight between the thick and thin strokes, and the hair-line serifs are horizontal and unbracketed.

The contemporary version of this fine alphabet, introduced in 1935, is best suited to calendered or coated paper surfaces. Unfortunately the extremely fine hair-lines make this face unsuitable for reverse-line reproduction work.

Though used for text composition in the smaller sizes, the contrast in strokes mentioned above can be tiring to the eyes if read for too long a period.

*Specimen settings of Bodoni*

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## CASLON

This famous Old Face alphabet was cut in 1722 by William Caslon, England's first and greatest type-founder. Now, more than two centuries later, the demand for the original Caslon Old Face is greater than ever. The Monotype version shown here was introduced in 1915. Compare with Fig. 31.

Characteristics of this face are the hollow apex to the capital A; the two complete serifs to the capital C; the swelling at the end of the ear to the small g, and the comparative lightness of both the lower- and upper-case S to the remainder of the fount. Due to the varying angles to which certain of the italic letters are inclined, the capitals A, V, and W appear to be off balance.

*Specimen settings of Caslon*

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## CENTAUR

One of the more modern book faces, Centaur was designed as recently as 1929 by Bruce Rogers, drawing free-hand over greatly enlarged versions of Jensen's roman face of 1470.

The typically "Venetian" characteristics of the diamond-shaped full-points, colons, and other punctuation marks are clearly evidenced in this alphabet. Note also the middle serifs to both the lower- and upper-case W, and the differing centre strokes of the capital W. The Chancery italic cut to accompany this Monotype face is Arrighi, designed by Frederic Warde.

### *Specimen settings of Centaur*

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## FOURNIER

Introduced by the Monotype Corporation in 1925, this face is a revival of the roman created *circa* 1730 by Pierre Simon Fournier-le-jeune, the famed Parisian typefounder. The first of the "transitional" faces (those which no longer conformed to the old-face tradition), the characters are somewhat condensed and the lower-case b is identified by its perfectly flat foot-serif.

The Monotype Corporation issue two versions of the capital alphabet—the original tall characters and an alternative set slightly reduced in height.

*Specimen settings of Fournier*

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## GARAMOND

Monotype Garamond Series 156, cut in 1922, is the so-called “Garamond” in general use today. This face, influenced by the Imprimerie Nationale types referred to as the “Caractères de L’Université,” was actually cut by Jean Jannon in 1621, and is therefore not a true Garamond.

It may be recognised by the scooped-out serifs on the lower-case m, n, p, and r; the thickened terminal to the capital J; the oppositely inclined serifs of the capital T; the flourish to the tails of the italic k, y, and z; and the width of the italic A, V, and W.

Garamond is well suited to antique paper but not to brush-coated art stocks.

### *Specimen settings of Garamond*

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## GILL SANS

Issued in 1927 by the Monotype Corporation as a titling face, the original for some of the capitals first appeared on the facia board of a Bristol bookshop which Gill had lettered for his friend Douglas Cleverdon. Stanley Morison (the celebrated type designer) saw this lettering and persuaded Gill to complete the alphabet and submit it to the Corporation.

From this one alphabet there has grown over twenty-four designs—bold, condensed, shadow, and so on.

Suitable for use on most paper surfaces, Gill is widely used for printing tabular work, leaflets, and publications of the engineering variety, for which its clean, precise letter forms are admirably appropriate.

### *Specimen settings of Gill Sans*

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## IMPRINT

Issued in 1912, Imprint (the first Old Face alphabet cut by the Monotype Corporation) was originally cast for the periodical appearing under that name.

Similar in many respects to Caslon (the face on which it was modelled), Imprint does, however, exhibit a somewhat larger x-height. Identification points are the capital C retaining only the upper serif and the more robust serifs of the capital S. Particularly worthy of mention is the rather condensed letter t in the lower-case alphabet.

The italic version of this face has a regular inclination and displays a wider set width than Caslon italic.

Imprint appears best in full colour on uncoated stocks.

*Specimen settings of Imprint*

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## MODERN EXTENDED

Modern No. 1 (Series No. 1) issued in 1900 by the Monotype Corporation was superseded in 1902 by Modern Extended No. 1 (Series No. 7). Adopted to meet the needs of the printing industry in an era when mechanical composition was being introduced as an alternative to hand composition, Modern Extended was not a new design but a copy of a face currently in use at that time.

Owing to its vast range of special signs, Modern Extended is particularly suited to the setting of mathematical and scientific works. Fairly even in weight and having strong, well-bracketed serifs, this face reproduces well on the majority of paper surfaces.

### *Specimen settings of Modern Extended*

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## OLD STYLE

Cut *circa* 1850 by Millar & Richard's employee, Alexander Phemister, this face was an immediate success. Based on designs of Caslon, the serifs are, however, slighter and sharper cut. Note the vertical emphasis, the short ascenders and descenders, and the thickened down stroke of the small g's tail.

The italic may be recognised by the thin strokes of h, m, n, r, commencing at the base of the heavy down strokes.

Suitable for catalogue work, textbooks, and similar technical productions, Old Style is also a good face for gravure printing, reproducing well on all but super-calendered stocks.

The Intertype version of this alphabet is called Bookface, and Linotype's version Bookprint.

### *Specimen settings of Old Style*

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## PERPETUA

This dignified "modern" face designed by Eric Gill is a translation into type metal of the characters he evolved for cutting in stone.

Named after St. Perpetua, this typeface (first used in a translation of *The Passion of Saints Perpetua and Felicity* in 1928) may be identified by the flat-topped capital A, the slightly splayed M, and the hooked top to the small a.

Felicity (the italic version) pays tribute to Gill's art as a calligrapher. Note particularly the capitals B, D, P, and R, and the lower-case g, k, and r.

Eminently suitable for bookwork both on antique and coated stocks, Perpetua does not require leading because of its small x-height.

### *Specimen settings of Perpetua*

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## PLANTIN

Monotype Plantin Series 110 was issued in 1913. Named after Christophe Plantin, the famous Antwerp printer, it is a slightly heavier version of one of the founts used in his *Index Characterum* of 1576, but retains the lines of the face originally cut by Claude Garamond.

Recognition points include the large x-height; the narrow “set” of the lower-case t; and in the upper-case alphabet the flat-topped A, splayed M, and the unclosed bowl of the P.

Originally cut as a letterpress face for work on coated stocks, this design is admirable for stereotyping and offset lithography.

### *Specimen settings of Plantin*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get himself into

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## ROCKWELL

First shown in Vincent Figgin's type specimen book of 1815 under the name of *Antique*, this slab-serifed alphabet was undoubtedly linked both in name and design with the Egyptian antiquities being unearthed at that time.

Re-issued under its present name in 1934, Rockwell is now available in light, medium, heavy, condensed, and shadow versions.

In 1951 this typeface was used almost exclusively for the specialist advertising of the Festival of Britain Exhibition.

Rockwell is suitable not only for printing on the majority of paper surfaces but also for reverse-line reproduction work.

### *Specimen settings of Rockwell*

A good *Compositor* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his *Work* shew graceful to the *Eye*, and pleasant in *Reading*: Therefore if his *Copy* be Written in a *Language* he understands, he reads his *Copy* with consideration;

[This face is not cast in the 11 point size.]

A good *Compositor* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his *Work* shew graceful to the *Eye*, and pleasant in *Reading*: Therefore if his *Copy* be Written in a *Language* he understands, he reads his *Copy* with consideration; that so he may get himself into the

## SCOTCH ROMAN

Revived in 1907, Scotch Roman (of which there are numerous versions) originated *circa* 1810 when cut by Richard Austin. The design of this “modern” face was a vast improvement on the continental typefaces of that era, and achieved great success among the English printers.

The entire alphabet exhibits a sturdiness not previously associated with this style of lettering; the serifs are bracketed (with the exception of the lower-case t); and the small e has an open, well-formed eye.

Modelled on a design originally issued by Miller and Richard of Edinburgh, Monotype Scotch Roman Number 2 Series 137, cut in 1920, is a good book face and prints well on most paper surfaces.

*Specimen settings of Scotch Roman*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may

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## TIMES NEW ROMAN

Designed specifically for *The Times*, this face was first seen on October 3rd, 1932; remaining the property of that newspaper for one year prior to being generally released to the printing industry.

Recognition points are the wide tail of the lower-case g; the sloping, well-bracketed serifs; the large x-height; and the low, oblique stress of the lower-case c and e.

The italic has the appearance of a sloped roman, which Stanley Morison (the typographer largely responsible for the creation of this type face) had long recommended.

Times New Roman reproduces perfectly irrespective of the medium (letterpress, lithography, gravure), and is suited to all but coated stocks.

*Specimen settings of Times New Roman*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get

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## VERONESE

A modern version of Nicholas Jensen's Venetian letter forms, Monotype Veronese is an "old style" alphabet with an extremely large x-height, oblique stress, and slab serifs reminiscent of *Antique*.

Other identification features are the tapering tail of the capital R; the round openness of almost the entire fount; the tilted bar of the lower-case e; the diamond-shaped full-points; and the serifs of the capital M projecting on either side of the verticals.

The italic retains the serifs of the roman version, and the small k may be recognised by the kink in the top right arm.

Veronese reproduces well on the majority of paper surfaces.

*Specimen settings of Veronese*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get

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## WALBAUM

First cut in the early nineteenth century by Justus Erich Walbaum, this "modern" face was introduced into England in 1925 by the Curwen Press and cut in Britain by the Monotype Corporation in 1934.

Peculiarities of this alphabet include the omission of the foot serif to the lower-case b and figure 4; the t is unbracketed, the g has a leftward thrust, and in the upper-case alphabet the J is short ranging.

Modelled closely on the designs of Giambattista Bodoni and Firmin Didot, the original matrices are now the property of the Berthold foundry, by whom they were purchased in 1919. Today many British printing offices have adopted Walbaum as a book face "classic."

*Specimen settings of Walbaum*

A good *Composer* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get himself into the meaning of the *Author*, and con-

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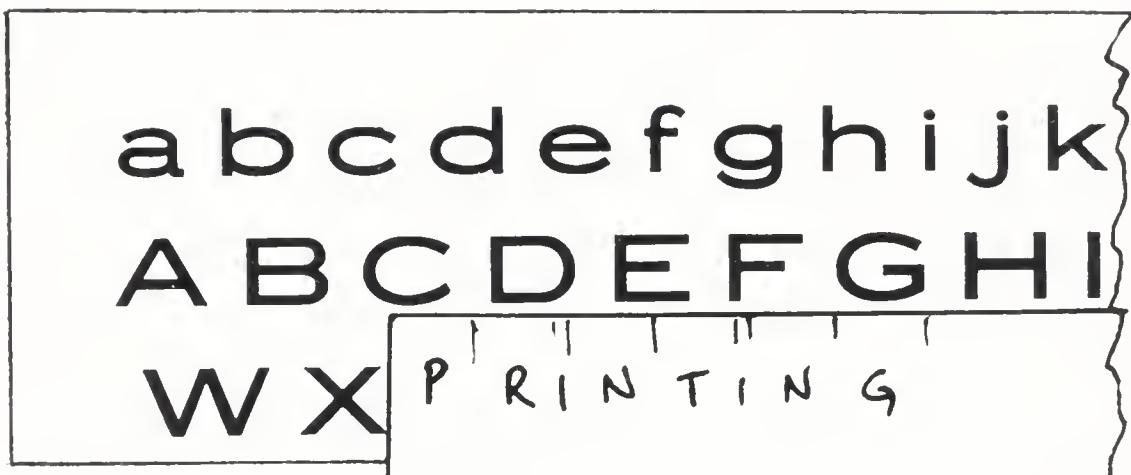
## STUDY QUESTIONS

1. "Slug-set typefaces are generally inferior aesthetically". Do you agree with this statement? Give reasons for your answer and provide portions of printed copy to qualify your findings.
2. Which typeface in particular would you recommend for a book on mathematics? State the reason for your choice.
3. Intertype's "Bookface" and Linotype's "Bookprint" are both versions of a well-known founder's typeface. Name the original design, the year in which it was introduced, and the foundry concerned.
4. Discuss the importance of Gill Sans in contemporary designing. Your answer to be accompanied by at least six different articles of printed matter employing that typeface.
5. Name the typefaces used throughout this book for: (a) the text matter, and (b) the title page.
6. In recent years the most popular book face has been "Monotype" Bembo—35% more books being printed in that face than in its nearest rival, Times New Roman. Compare these two faces carefully and discuss why you think Bembo is so fashionable at present.

a b c d e f  
g h i j k l  
m n o p q  
r s t u v w  
x y z

FIG. 42b.—Copy Alphabet: 72-point Gill Sans lower-case.

the “set” width of the first character on a slip of paper, transfer this width to the cartridge paper, and then *neatly* and *lightly* draw this letter until it is perfect—then, using a small brush (preferably a No. 1 sable), paint in the letter with Indian ink. Now proceed to the second letter and so on throughout the alphabet:



Once the preceding alphabets have been practised and mastered, it is necessary to appreciate that there will be many occasions on which there will be neither the time nor the need for perfectly finished lettering, yet a prospective customer may well be anxious to see what ideas you are capable of producing while he waits—or a composing-room layout may have to be devised in but a few minutes.

To do this, it is essential to be able to reproduce with a certain degree of perfection the letters you have been copying—but now with the sole aid of a carpenter’s pencil sharpened to a chisel point (see Fig. 72).

A little practice will soon convince you of the simplicity of this lettering style and enable you to “rough out” numerous ideas in a very short space of time.

As with the previous chapter on “book” typefaces, a brief account concerning the origin and peculiarities of design relevant to each of the following “display” typefaces is given.

## ALBERTUS

Designed by Berthold Wolpe, a German who emigrated to England in 1934, Albertus was first issued by the Monotype Corporation in 1935 as a titling face, and includes Albertus Titling 324; Albertus 481 (with lower-case); Albertus Light 534 (with lower-case); Albertus Bold Titling 538.

Devoid of serifs in the accepted sense of the term and with sheared stroke terminals, Albertus does not mix readily with other typeface designs, particularly those of Egyptian, Latin, or Sans-serif variety. Where other types must be employed it is safest to select an “old face” family, as the oblique stress of the O shows characteristics of that group.

ABCDEF<sup>24 pt.</sup>  
GH<sup>I</sup>JKL<sup>M</sup>NOPQ  
abcdefghijklmnopqrstuvwxyz

[This face is not cast in the 30 point size.]

ABCDEF<sup>36 pt.</sup>  
GH<sup>I</sup>JKM  
xyzabcdefghijklm  
ABCDEF<sup>48 pt.</sup>  
GHI

## BASKERVILLE

For historical notes and main identification points of this typeface refer to p. 67.

<sup>24 pt.</sup> ABCDEFGHIJKLMNOPQ  
abcdefghijklmnopqrstuvwxyz

<sup>24 pt.</sup> ABCDEFGHIJKLMNOPQR  
*abcdefghijklmnopqrstuvwxyz*

<sup>30 pt.</sup> ABCDERSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

<sup>36 pt.</sup> ABCDEFGHIJKL  
abcdefghijklmnopqrstuvwxyz

<sup>48 pt.</sup> ABCDEFGHI  
abcdefghijklmnopqrstuvwxyz

## GILL

For historical notes and main identification points regarding this typeface refer to p. 75.

A B C D E F G H I J K L M N O P Q R      24 pt.

a b c d e f g h i j k l m n o p q r s t u v w x

A B C D E F G H I J K L M N O P Q R S T      24 pt.

a b c d e f g h i j k l m n o p q r s t u v w x y

A B C D E S T U V W X Y Z      30 pt.

a b c d e f g h i j k l m n o p q y z

A B C D E F G H I J K L      36 pt.

a b c d e f g h i j k l m n o p

A B C D E F G H I      48 pt.

a b c d e f g h i j k m

## GROTESQUE

Currently issued by Stephenson, Blake & Co. Ltd., Grotesque was the name originally applied to one of the earliest sans-serif typefaces produced in 1832 by William Thorowgood. Today, however, the name is used to identify the majority of sans-serif designs modelled on nineteenth-century versions.

The face is recognisable by the somewhat compressed nature of the entire alphabet; the spur to the capital G; the almost equal width of all the upper-case alphabet; and the lower-case characters a, e, g, and t, which in the larger size shown are modelled on roman letter forms.

24 pt.

A B C D E F G H I J K L M N O  
P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t  
u v w x y z

Compare alternative forms of  
lower-case "a" and "g" below

30 pt.

A B C D E F G H I J K L  
M N O P Q R S T U V  
a b c d e f g h i j k l m n o p

## MADONNA RONDE

Undisputedly the finest square-bodied script typeface so far produced, this delightful alphabet was designed by Lucian Bernhard in 1925 for the Bauersche Giesserie, and issued under the name of Bernhard Cursive.

Re-issued by Stephenson, Blake & Co. Ltd. and renamed Madonna Ronde, the main points of identification include small x-height coupled with the exceptionally tall ascenders and short descenders. There are no top serifs to the lower-case characters b, d, and l, though the h has a small hooked finial stroke; the main strokes of letters p and q ascend appreciably above the x-height of their respective bowls.

*A B C D E F G H I J K L M* 24 pt.

*a b c d e f g h i j k l m n o p q r s t u v w x y z*

*A B C D E F G H I J K L* 30 pt.

*a b c d e f g h i j k l m n o p q r s t u v w x y z*

*A B C D E F G H I J* 36 pt.

*a b c d e f g h i j k l m n o p q r s t u v w x y z*

*A B C D E F G J* 42 pt.

## MERCURIUS

Owing to the increasing popularity of the informal scripts of Continental design, the Monotype Corporation commissioned Imre Reiner to design this face specifically to suit their matrices, *i.e.* to have as few overhanging characters as possible. It appears to have been based on "Reiner Black" cast in 1955 by the Berthold Foundry, Berlin, and issued in England in early 1958.

24 pt. **A B C D E F G H I J K L M N O P Q**  
*a b c d e f g h i j k l m n o p q r s t u v w x y z*

30 pt. **A B C D E F G H I J K L M**  
*a b c d e f g h i j k l m n o p q r s t*

36 pt. **A B C D E F G H I J K**  
*a b c d e f g h i j k l m n o*

60 pt. **A B C D E F**  
*a b c d e f g h i j*

## PALACE SCRIPT

Cut and cast on rhomboidal bodies, Palace Script is an English copperplate alphabet introduced by Stephenson, Blake & Co. Ltd. in 1923.

Steeply inclined and with abrupt colour variation, this script links so perfectly as to create the impression of continuous handwriting. With the exception of the lower-case f, the ascenders of all the other small letters are horizontally sheared and unlooped.

Though used to a great extent for the printing of wedding invitations, business cards, and the like, it is well to remember that, in the larger sizes, this letter form can be the perfect partner for contrasting with the more robust display faces such as Old Face Open, Profil, and so on.

A B C D E F G H I J K L

24 pt.

a b c d e f g h i j k l m n o p q r s t u v w x y z

A B C D E F G H I

30 pt.

a b c d e f g h i j k l m n o p q r s t u v w x y z

A B C D E F G H

36 pt.

a b c d e f g h i j k l m n o p q r s t u v w x y z

## PERPETUA

For the historical notes and main points of identification concerning this typeface refer to p. 79.

<sup>24</sup> pt. ABCDEFGHIJKLMNOPQRS

abcdefghijklmnopqrstuvwxyz

<sup>24</sup> pt. ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

<sup>30</sup> pt. ABCDEFGTUVWXYZ

abcdefghijklmnopqrstuvwxyz

<sup>36</sup> pt. ABCDEFGHIJKL

abcdefghijklmnopqrstuvwxyz

<sup>48</sup> pt. ABCDEFGHIJ

abcdefghijklmnopqrstuvwxyz

## PLANTIN

For the historical notes and main points of identification regarding this face refer to p. 80.

A B C D E F G H I J K L M N O 24 pt.  
a b c d e f g h i j k l m n o p q r s t u v x

A B C D E F G H I J K L M N 24 pt.  
a b c d e f g h i j k l m n o p q r s t u v w x

A B Q R S T U V W X Y Z 30 pt.  
a b c d e f g h i j k l m n o p y z

A B C D E F G H I J 36 pt.  
a b c d e f g h i j k l m n o

A B C D E F G H 42 pt.

## PROFIL

One of the most successful display typefaces of the present time, Profil was designed by Eugen Lenz and issued by the Hass'sche Schriftgiesserei in 1943.

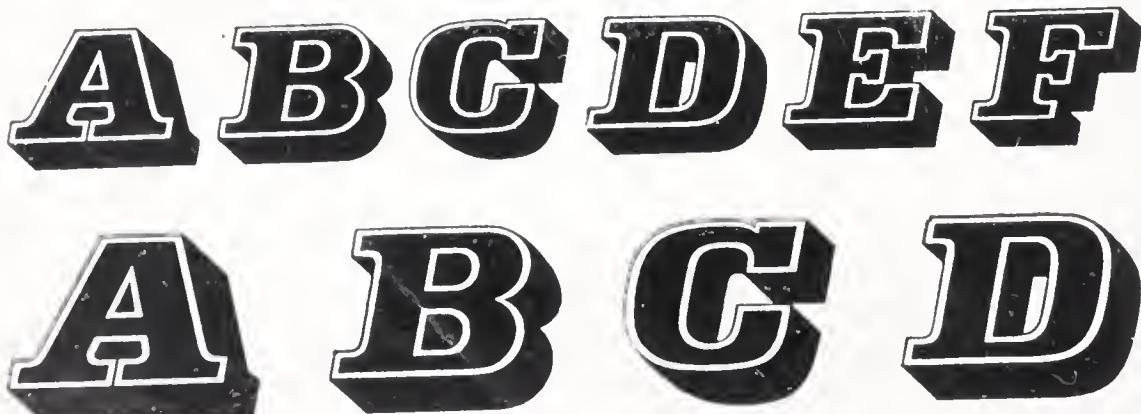
Cast solely as a titling face, the use of this alphabet is best reserved for giving impact to one or two words only—this is especially effective if colour is also employed.

A slab-serifed typeface reminiscent of “Antique,” it marries equally well with either roman or sans-serif types.

Supplied only in the Continental type body sizes (Didot); these type sizes are larger than the British and American systems of measurement: the Didot “point” measures 0.0148 in., as compared with our “point” of 0.013837 in.



24 pt.  
Didot)



36 pt.  
Didot)

48 pt.  
Didot)

## TIMES NEW ROMAN

For the historical notes and recognition features concerning this alphabet refer to p. 83.

A B C D E F G H I J K L M N O      24 pt.

a b c d e f g h i j k l m n o p q r s t u v

A B C D E F G H I J K L M N O      24 pt.

a b c d e f g h i j k l m n o p q r s t u v w

P Q R S T U V W X Y Z      30 pt.

a b c d e f g h i j k l m n w x y z

A B C D E F G H I K      36 pt.

a b c d e f g h i j k l m n o

A B C D E F G      48 pt.

a b c d e f g h i j k l

## WIDE LATIN

Re-introduced during the past few years by Stephenson, Blake & Co. Ltd., this useful display type is enjoying a new lease of life, especially among advertisers requiring a wide character for driving out short words or phrases.

Wide Latin is immediately recognisable by the short ascenders and descenders and pointed (wedge-shaped) serifs.

An almost identical version is issued by the Monotype Corporation under the name of Latin Antique Wide.

18 pt.

**A B C D E F G  
H I J K L M N  
O P Q R S T U  
V W X Y Z**

**a b c d e f g h i j k  
l m n o p q r s t  
u v w x y z**

30 pt.

**A B C D E F  
a b c d e f g h i**

36 pt.

**A B C D E**

48 pt.

**A B C**

## TYPE FAMILIES

In the preceding pages of text and display typefaces it has been possible only to show the roman and italic versions. However, most typefaces have a much fuller range (referred to as a "family") which may well include Light, Medium, Semi-Bold, Bold, Extra-Bold, Condensed, Extra-Condensed, Extended, Titling (a capital alphabet having no beard), Shadow, Inline, Cameo (reversed white on black), etc.

The following lines, composed entirely in 24-point Gill Sans "family" will give some idea as to the abundance of weights and styles available.

**A B C D E f g h**

**A B C D**

**A B C D**

From this vast array it is possible to design within the "family" without recourse to a different typeface.

Many of the above-mentioned faces also have italic versions and quite complicated combinations can, and do, arise, *i.e.*, Gill Sans Shadow Titling, Grotesque Bold Extended Italic, Egyptian Expanded Open, and so forth.

## STUDY QUESTIONS

1. Draw and paint-in the words DESIGN FORCE in 72-point Baskerville and Gill capitals.
2. In finished lettering, using 48-point Perpetua upper- and lower-case, write the word Typography.

3. Draw a complete upper- and lower-case alphabet of Gill Sans.
4. Using a chisel-pointed pencil draw a lower-case letter "i" in (a) Perpetua italic and (b) Bembo Italic and explain the differences between them.
5. Design a panel containing the words THE TYPOGRAPHICAL ASSOCIATION. The choice of lettering is left to your own discretion.
6. How does the lower-case "g" differ in Bembo italic and Perpetua italic? Draw neat letters to accompany your answer.
7. To the best of your ability draw and paint the name of JOHN BASKERVILLE in 36-point Bembo capitals. Pay special attention to the letter spacing.

*Section III*

*Book Design*



## CHAPTER SEVEN

# TYPE SELECTION AND PAGE FORMAT: ELEMENTARY TYPE CALCULATIONS

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IN an elementary book of this nature it is not proposed to cover in great detail the whole field of book design; the subject requires a book in itself (*see* Bibliography). Nevertheless, the student of design must be aware of the factors to be taken into consideration when a book is to be designed, for this is probably one of the most fascinating tasks which can fall to printer, publisher, or typographer. Confronted in the first instance with the author's manuscript and, possibly, some illustrations, these elementary beginnings must constitute the foundation on which to build.

Careful checking of the manuscript will reveal the true content of the book and suggest the *style* in which it should be produced. A light novel or detective story, or a work of non-fiction of mainly topical interest may be best presented as a paperback. A serious novel or a non-fiction work of more lasting importance will obviously need a sewn binding. The quality will vary with the type of book, and with the eventual purpose of the particular edition, *e.g.* a dictionary may be cheaply bound for students or luxuriously bound for the family book-case.

Having ascertained the style of the book, it is relatively easy to determine the size, bearing in mind that this must be such that it can be cut from a standard paper size without undue wastage. Obviously a "paperback" thriller suitable for the coat pocket must not exceed a certain measurement,

usually Crown octavo ( $7\frac{1}{2}$  in.  $\times$  5 in. untrimmed); this size is also suitable for students' textbooks, pocket guide-books, and works of a similar nature. For a large detailed work of reference, or for a child's picture book, a far larger and more impressive format will be desirable, ranging from medium octavo (9 in.  $\times$   $5\frac{3}{4}$  in. untrimmed) to medium quarto (11 $\frac{1}{2}$  in.  $\times$  9 in. untrimmed).

#### TYPEFACE AND PAPER

Once an acceptable size has been selected, the next step is to decide on (*a*) the type *face*, and (*b*) the type *size*, but these two factors cannot be considered in isolation from (*a*) the paper to be used, and (*b*) the subject matter of the book.

When choosing the paper it is necessary to remember that to avoid eye strain the resulting print should be clear and sharp, but above all easily readable without strain. Clarity and readability do not necessarily go together. An expensive white art, though producing a crisp, clear image and being eminently suitable for the reproduction of fine-screen half-tone illustrations, will nevertheless cause glare resulting in eye strain. This is aggravated if the work is composed in Bodoni or any other typeface having great contrast in weight between the major strokes and the hair-line serifs. The whole subject of paper suitability is covered at greater length in Chapter Eight, but it may be said here that where the use of a coated paper is unavoidable, suitable typefaces would be Linotype Venezia, Plantin, or Times Roman, which, due to their somewhat monotone colour, create less dazzle and strain.

Probably the most pleasing impression is given on an unglazed or antique variety of paper and a suitable typeface which, when processed, will tell the reader their story without his being aware of their presence. That is one of the

qualities of a well-produced book—that the paper and type marry so effectively that they do not disturb the reader but rather add to his pleasure by their subtle inducement to read yet another chapter.

Bearing these points in mind, it may be decided to use, for instance, Bembo (as the type-face) and antique wove (as the paper) for the printing of a classical or similar work.

Alternatively, a textbook on mathematics might well be printed in Modern Extended No. 1 due to its vast range of special signs. Though this typeface will reproduce reasonably well on the majority of paper surfaces, one would not specify Antique stocks—the reason for this lies in the need (usually) to produce a book of some 200–300 pages yet not exceeding an inch in thickness. The aforementioned papers “bulk” well and make impressive volumes, but for textbooks a light-weight supercalendered or machine-finished paper is to be preferred.

Another disqualification for the use of an unglazed or uncoated paper would naturally be the necessity for including halftones or fine-line illustrations within the body of the text. The question of suitability of blocks to paper is again dealt with in Chapter Eight.

A really cheap edition of a paper-backed thriller intended to last but a very short period of time would doubtless warrant the use of little better than a newsprint paper and a suitable typeface such as Scotch Roman or Times.

The diligent reader will doubtless have noticed that one well-known family of typefaces has so far been completely ignored—that of the sans serifs. There are, however, certain very logical reasons for dealing with this family as a separate entity.

As you are well aware, sans serif typefaces are clean, crisp, and to-the-point designs: this makes them suitable for brief

texts related to engineering or similar processes, and in the larger sizes (18 point or 24 point) they are the perfect choice for a book of nursery rhymes or fairy tales intended for the youngster who is just learning to read and write in the elementary block-letter style.

“Why,” you may well ask, “is this face considered unsuitable for composing the text of a normal book?” The reason is two-fold:

(a) due to the lack of serifs (which normally lead the eyes from one letter to another) the reading of a great amount of sans serif type is a strain on the eyes.

(b) the adult reader does not read individual letters or even single words, but rather groups of words—to facilitate this “group” reading it is essential to use a serifed typeface.

#### TYPE SIZE

The foregoing paragraphs have outlined some of the basic principles to be considered in the selection both of the typeface and paper surface allied to the subject matter of the book(s) under consideration. There remains, however, a very important factor to be solved—that of type size.

It is appreciated that the majority of readers (other than those engaged in printing) will be unaware of the system of measurement peculiar to that industry. Before discussing type size selection it is therefore necessary to give a brief résumé of the standard to which all type, leads, rule borders, printing areas, and the like must conform.

Referred to as the “point” system, the unit from which it derives its name measures approximately one-seventy-second part of an inch. This unit is used to designate the body size of types (the measurement from back to front of

the body), whereas the larger unit, referred to as a pica and containing twelve points, is used to express the areas of type pages, the length of rule borders, the body size of types in excess of 72 point, etc.

Assuming the foregoing brief explanation to have been understood, one would obviously not specify 8-point type, of which there would be nine lines to the inch (8 point  $\times$  9 lines = 72 points), for a children's encyclopaedia; nor, on the other hand, would 14-point type (approximately five lines to the inch) be considered practicable for a paperback novel. In the first instance the type would be too small for a child to read, and in the next would make too many pages. These, however, are merely the *obvious* reasons for using, or not using, type of a particular body size—the main reason being far more specific.

To ascertain the size of type most suitable, therefore, a mathematical approach is required. For ease of reading and to facilitate setting, the average line of composed text matter should measure about twice the linear width of the lower-case alphabet of the chosen typeface. To simplify this, the following table has been compiled for easy reference:

Type Size	Average Line Widths (picas)		
	Minimum	Mean	Maximum
6 point	10	13	18
7 point	11	15	20
8 point	13	18	24
9 point	14	20	27
10 point	16	22	30
11 point	18	24	33
12 point	20	26	36
13 point	21	28	39
14 point	23	30	42

In any event, the width of line to use for a particular format follows certain conventions—one will usually find that the measure is roughly 21–22 picas in a crown 8vo, 24–25 picas in a demy 8vo, and so on. Hence it will be seen that type size, if we are to follow the rules outlined in the table above, is governed to some extent by the format itself, and vice versa. Much depends on the size of page margin—this aspect is dealt with in Chapter Eight.

Having decided upon the size of book to be produced, the paper to be processed, the typeface, and type size, it now remains to calculate the number of pages that will result from the setting of the manuscript. This is a most vital part of book design, for the result of this cast-off may well mean that format, type size, or even typeface may have to be adjusted to increase or reduce the number of pages.

#### ELEMENTARY TYPE CALCULATIONS

Casting-off copy, the art of mathematically determining how much space a given amount of copy will make when set up in type, will undoubtedly have been dealt with by trade apprentices attending classes on printing theory, but the full-time art student is seldom indoctrinated with the mysteries of “printers’ maths.”

Before any form of calculation can be attempted it is essential to understand the basic principles on which these problems are resolved.

First, it must be accepted that, on average, each word in the English language contains five characters and, naturally, after each word there is a space. It has long been established that each character and space averages 1 en of whatever type body size it is composed: therefore, for every

word (plus its accompanying space) there are 6 ens (or 3 ems\*) of the particular type size to be used.

Secondly, the copy itself must be considered. Is it *good* or *bad*? This is extremely important, as bad copy (in common bookwork) requires an addition of 5% to the total number of words in the copy.

### Good Copy

A manuscript which is capable of being averaged and does not require complete counting is referred to as "good" copy. Usually it consists of a number of sheets each bearing the same number of lines which contain a similar number of words.

### Bad Copy

This type of copy is recognisable as slovenly prepared or roughly scribbled sheets which are incapable of being averaged; typescript which has undergone a vast amount of correcting; reprint copy set in different type sizes and measures and so forth.

When dealing with this type of copy it is essential to increase the word content by 5% to make allowance for paragraph break lines. Note that this procedure is adopted *only* when dealing with bad copy which is recognised as consisting of so many thousand words or ens.

\* In printing, all type sizes are referred to as being so many *points*. The square unit of any type is called an *EM* (or "mutton"), and the unit half this size is termed an *EN* (or "nut"). Thus a 10-point em would measure  $10 \times 10$  points, but the en would measure only  $5 \times 10$  points. Confusion is often caused by the fact that the term "em," used without qualification, is taken to refer to the 12-point em specifically. To avoid confusion "pica" has been used where it is desired to indicate 12 points as a linear measure.

## EN METHOD OF CASTING-OFF

As designers of printed matter it is likely that you will be called upon to determine the number of pages in a book, and the efficient designing of an advertising folder may well depend on your ability to "fit the copy." For this reason the following problems have been devised to illustrate how the various answers can be obtained.

## Twelve-point Type

When casting-off copy from a purely theoretical point of view it is usual to apply the "en method." The average width of each character and space is assessed as an en quad. There are two en quads to every em quad; thus, to find out how many ens of 12 point there are to a line, the width (which is always measured in 12-point ems—or picas, see footnote on p. 119) must simply be multiplied by two. This, multiplied by the number of lines to one page, reveals the en content of the page.

*Example.* If a page type area measures 24 picas wide by 40 picas deep, how many 12-point ens will it contain?

$$\begin{aligned}
 &= 24 \times 2 \text{ ens} \times 40 \text{ lines} \\
 &\quad \begin{array}{r} 24 \\ \times \quad 2 \\ \hline \end{array} \\
 &\quad \begin{array}{r} 48 \\ \times \quad 40 \\ \hline \end{array} \\
 &\quad \begin{array}{r} 1920 \\ \text{ens per page.} \end{array}
 \end{aligned}$$

Knowing this, it is now easy to assess the number of ens to a given number of pages by multiplying this result by the number of pages, thus:

*Example—* How many 12-point ens would be contained in 16 pages, each page having a type area of 22 picas wide by 34 picas deep?

= 22 × 2 ens × 34 lines × 16 pages.

$$\begin{array}{r}
 & 22 \\
 \times & 2 \\
 \hline
 & 44 \text{ ens per line.} \\
 \times & 34 \\
 \hline
 & 1,496 \text{ ens per page} \\
 \times & 16 \\
 \hline
 & 23,936 \text{ ens in 16 pages.}
 \end{array}$$

Assuming the foregoing examples to be fully understood, it is only necessary now to apply the theory to actual copy. Taking the average word (plus space) as 6 ens, we can convert words into ens, and vice versa.

*Example.*—Copy for a small folder consists of 5 pages, each averaging 20 lines of copy with 12 words to a line. How many ens would it make if set up in type?

= 5 pages × 20 lines × 12 words = word content of the copy; this multiplied by 6 = en content of copy.

$$\begin{array}{r}
 & 5 \\
 \times & 20 \\
 \hline
 & 100 \text{ lines in copy} \\
 \times & 12 \\
 \hline
 & 1200 \text{ words in copy} \\
 \times & 6 \\
 \hline
 & 7200 \text{ ens in copy.}
 \end{array}$$

The foregoing examples provide two important facts:

- (1) the means of determining the number of ens to a page, and
- (2) the means of determining the number of ens in a given number of words and pages.

From these facts it is possible to calculate how many pages of type will result (theoretically) from the setting of the manuscript in a given type size to a specified page type area.

*Example.*—How many pages will result from the setting in 12 point solid of copy consisting of 90 folios of 15 lines, averaging 8 words per line, to a page type area of 18 picas wide by 36 picas deep?

$$90 \times 15 \times 8 \times 6 = \text{ens in manuscript.}$$

$$18 \times 2 = \text{ens per line} \times 36 \text{ lines} = \text{ens of 12 point in a page.}$$

If the en content of one page is divided into the en content of the entire manuscript the resulting figure will represent the number of pages it will make. The problem can be expressed thus:

$$\frac{\overbrace{90 \times 15 \times 8 \times 6}^{\text{ens in a copy}}}{\overbrace{18 \times 2 \times 36}^{\text{ens in a page}}} = 50 \text{ pages of 12-point type.}$$

### Other Type Sizes

The problems so far considered have all been concerned with 12-point type, but if the size to be used is 8 point, for example, an additional working is necessary to determine the number of ens (of 8 point) contained in one page.

Return to the first example on en theory; this related to the number of 12-point ens in a page type area of 24 picas wide by 40 picas deep, and resulted in 1920 ens.

To estimate the number of 8-point ens in the same type area it is necessary to find: (1) the number of 8-point ens in a line, and (2) the number of 8-point lines in the page depth. The resulting factors multiplied together provide the number of ens.

The number of ens in a line is determined by reducing the line to points (by multiplying by 12) and dividing by the

points in 1 en of the type to be used, in this case it will be 4 points (half of the 8-point em).

$$\therefore \frac{24 \times 12}{4} = 72 \text{ ens of 8 point in one line.}$$

The number of lines to the page is determined by reducing the page depth to points (by multiplying by 12) and dividing by the body size to be used, in this instance 8-point.

$$\therefore \frac{40 \times 12}{8} = 60 \text{ lines of 8 point in one page.}$$

$$72 \text{ ens} \times 60 \text{ lines} = 4320 \text{ ens of 8 point in one page.}$$

The vast difference between these two answers (1920 ens of 12-point type against 4320 ens of 8-point type in an identical area) may at first sight appear unbelievable. To understand why this occurs it is essential to appreciate that an em unit of any given type size contains as many points as the square of its body size. Therefore a 12-point em will contain 144 square points ( $12 \times 12$ ), whereas a 10-point em contains only 100 square points ( $10 \times 10$ ), an 8-point em has only 64 square points ( $8 \times 8$ ) and so on.

To prove the foregoing statement, apply it to the previous problem thus:

To find out how many ens of 8 point are contained in 1920 ens of 12 point, multiply the 12-point ens by the square of their body size and divide by the square of an 8-point en:

$$= \frac{1920 \times \overbrace{12 \times 6}^{\text{points in a 12-pt. en}}}{\underbrace{8 \times 4}_{\text{points in an 8-pt. en}}} = 480 \times 9 = 4320 \text{ 8-point ens.}$$

When calculating the en content of a page in sizes other than 12 point it will invariably be found that a fraction of an en in width, and/or of a line in depth is encountered.

Reverting once more to the  $24 \times 40$  picas page type area, the en content in 10 point will resolve as follows:

$$\begin{array}{c}
 \text{en points} \\
 \overbrace{\quad\quad\quad}^{\text{12-point ems wide}} \quad \overbrace{\quad\quad\quad}^{\text{points per em}} \quad \overbrace{\quad\quad\quad}^{\text{ens per em}} \\
 24 \quad \times \quad 12 \quad \times \quad 2 = 57.6 \text{ ens of 10 point in one line.} \\
 \text{body size of type} \\
 \hline
 \end{array}$$

$$\begin{array}{c}
 \text{12-point ems} \quad \text{points} \\
 \text{deep} \quad \text{per em} \\
 \hline
 40 \quad \times \quad 12 = 48 \text{ lines of 10 point to the page.} \\
 \text{body size of type} \\
 \hline
 \end{array}$$

The accepted rule of the printing industry in the case of fractions is to ignore any fraction of an en quad less than 0.66 (this being equivalent to a thick space, or two-thirds of the en); thus in the previous example the 0.6 would be ignored and the ens per line calculated as 57.0.

In the depth, however, any fraction of a line less than 0.5 (or one-half) is ignored; one-half or more being calculated as a full line.

### Type and Leads

So far, all the calculations studied have dealt with type set solid, that is to say, without leading between the lines. The inclusion of leads will obviously affect the en content, as a number of ens are bound to be displaced in the process.

The en content per line is found in exactly the same way as previously described, but the number of lines per page (unless already known) can be determined as follows:

Multiply the page depth by 12 (to reduce to points) and divide by the body depth of the type plus the thickness of the leading to be used, one lead being allowed for after each line of type.

If, for example, 10-point type has been specified with a 2-point lead after each line, the number of ens in a page type area 20 picas wide by 36 picas deep is assessed in the following manner:

Find the number of 10-point ens in a line 20 picas wide by the method already practised; this will result in 48 ens. The number of lines to the page is found by reducing the page depth to points ( $36 \times 12$ ) and dividing by the body size plus lead ( $10 + 2 = 12$  points).

$$\begin{array}{rcl} & \text{em} & \text{points} \\ & \text{deep} & \text{per em} \\ \therefore & \frac{36}{12} \times 12 & = 36 \text{ lines of 10-pt. type 2-pt. leaded} \\ & \text{body size (plus lead)} & \end{array}$$

$$\therefore 48 \text{ ens wide} \times 36 \text{ lines deep} = 1728 \text{ ens of 10-point type point leaded per page.}$$

#### SQUARE POINT METHOD

An alternative method for calculating the number of pages resulting from the composition of a given number of words and pages is the "square point" method.

This theoretical system relies upon the one unit common to both the manuscript, type size chosen, and the eventual text-page area of the book to be produced, *i.e.* the square point. If the manuscript is reduced to square points and then divided by the square points contained in the area of one text matter page the resulting answer must represent the number of pages in the book.

In an earlier part of this chapter it is explained that every word in the English language averages 3 ems (of its own type body size). By accepting this fact it is possible to reduce any manuscript to word ems (three times the number of words); multiplying this number by the square of the type size to be used reduces the manuscript to square points.

The square points in a text page area are calculated by multiplying both the width and the depth measurements by twelve (the number of points contained in the standard em or pica used for expressing such areas).

Assuming the manuscript under consideration to contain 288 folios averaging 24 lines each and 10 words per line, and that the type size chosen for the book is 10-point solid, how many pages will all this make if the text-matter area measures 20 picas wide by 30 picas deep?

This question resolves itself into a simple two-line problem which, after cancellation, reveals the required information as follows:

$$\frac{\text{word ems in manuscript}}{288 \times 24 \times 10 \times 3} = \frac{\text{square points}}{20 \times 12 \times 30 \times 12} = 240 \text{ pages.}$$

points in                    points in  
page width                page depth

The above calculations make no provision for the space taken up by chapter headings, or for blank portions left at the end of chapters where the new heading is to begin a new page.

#### STUDY QUESTIONS

##### *Type Selection and Page Format*

1. What size of page would you specify for a students' textbook? State what considerations influenced your decision.
2. You are preparing the specifications for a book on mathematics. What typeface would you suggest and what paper? Explain the reasons underlying your selection.
3. Gill Sans has been suggested for the text of a book. In what circumstances would you consider the choice of this face to be acceptable?

*Casting-off Theory*

4. What do you understand by the terms *good* and *bad* copy, and in what way (if any) do they affect type calculations?
5. In your own words, explain the theory concerning the number of ems contained in the average English word plus its allotted space.
6. Copy consisting of 12 pages containing 20 lines per page and 8 words per line is to be set in 12 point solid to a type page area of 20 ems wide by 34 ems deep. How many pages will result?
7. Determine the number of 10-point ens contained in a panel 15 ems of 12-point wide by 25 ems of 12-point deep.
8. Having resolved the previous question into 10-point ens, assess the number of words the panel would hold if set in that size type.

## CHAPTER EIGHT

# PAGE MAKE-UP; PAPER

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THE previous chapter dealt primarily with the problems to be considered before a manuscript can safely be consigned to the printer, eventually to emerge as proofs set in the typeface and type size requested and to the specified text-matter width. When these proofs have been marked-up and returned to the printer for correcting and making up into pages there are various other items of information with which he must be supplied.

### HEADINGS

#### Chapter Headings

These indicate the contents and give the number of each chapter. Some headings are lowered slightly below the normal head-line and are referred to as "dropped heads." There is no severe restriction regarding the setting of these headings, and the typographer may use his discretion and plan according to the period or mood of the book.

It is not always considered necessary to include the word "Chapter" when designing the headings, the number being indicated only, and a more prominent feature being made of the title itself.

#### Running Head-lines

Normally every page of text is preceded by this single line of type; the left-hand page usually bearing the title of the book and the right-hand page the title of the chapter at

that point. This line may be set in numerous plain or decorative ways to enhance the book as the typographer thinks best (*see* Fig. 43).

## TWENTY-SIX LEAD SOLDIERS

TWENTY-SIX LEAD SOLDIERS

---

*TWENTY-SIX LEAD SOLDIERS*

12

*Twenty-six Lead Soldiers*

TWENTY-SIX LEAD SOLDIERS

---

17

FIG. 43.—Examples of different treatment suitable to running head-lines.

Some book-designers would say that the head-line serves but little purpose unless it is to “bump-out” the book by reducing the text-page area by two lines per page and thus increasing the number of pages, or to assist librarians to locate any leaf that may become detached. However, the head-line may also assist the reader in finding his way about the book, and it provides a convenient place for the page number.

### Placing of Page Numbers

These are usually set in arabic numerals, and may be placed either at the foot of the page or, as is generally preferred, at either side of the running head-line (*see* Fig. 43). Where a booklet contains but a few pages it is permissible to spell out the folios either in italics or in small capitals. Some typographers are prone to decorate even these with

brackets, parentheses, and other ornamentations, but there seems little value in such decoration.

#### MARGINS

Although many books are produced with the text matter centred on the page areas, the margins being equally distributed on all sides, it is more usual in all but the very cheapest publications to allow larger margins at fore-edge and foot.

In this respect the designer must remember that on opening a book *two* pages and not one are always presented to the reader; and it is on this “double-page spread” that the type areas must be placed.

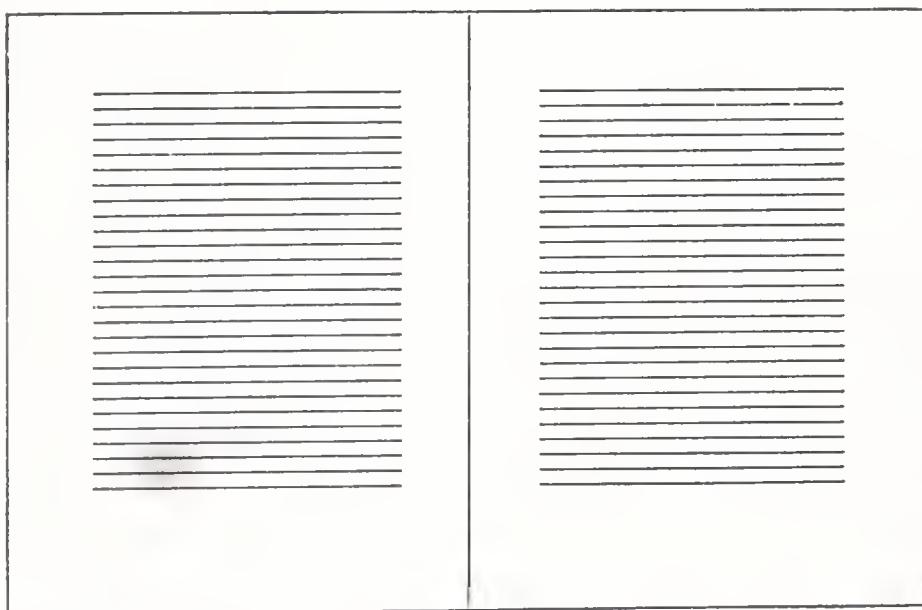


FIG. 44.—Suggested placing of page type areas of a quarto book when seen as a double-page spread.

In allocating the three vertical margins (a back margin and two fore-edge margins) it is therefore normal practice to make these areas equal, each individual back margin being in fact half the width of the fore-edge ones (*see* Fig. 44). However, some allowance must be made for the fact that some of the back margin disappears into the folds; in prac-

tice, therefore each back margin is made slightly more than half as large as the fore-edge margin.

As already mentioned, it is usual also to allow greater margins at the foot of the page. It will be seen, therefore, that the text is usually placed inwards and upwards of dead centre on the page area. The marginal ratios used in various types of bookwork are as follows (ratios calculated on untrimmed paper sizes):

TYPE OF WORK	Back	Head	F'edge	Tail	Area covered with print, %
Cheap work	3	4	5	6	60
Medium class	2	3	4	5	50
Best work	3	4	7	10	40

A method of calculating text area for de-luxe editions is to conform to the so-called "Golden Mean." This is the name given to the Ancient Greek proportion of *three to five*.

Taking, for example, a page measuring  $7\frac{1}{2}$  in.  $\times$  5 in. (Crown 8vo), the area to be occupied by the text matter is determined by applying the ratio of three to five to each of these measurements. The page type width will therefore be 3 in. (or 18 picas) and the text-matter depth will be  $4\frac{1}{2}$  in. (or 27 picas). It will be seen that the resultant area under type falls very near to the 40% given in the table above.

Where such pretentious margins are not required, it is still very important that there should be a relationship between the page and the type area to be printed upon it. This relationship may be calculated from the table, or by ruling a diagonal line from the upper left-hand corner down to the bottom right-hand corner of the page, marking off the

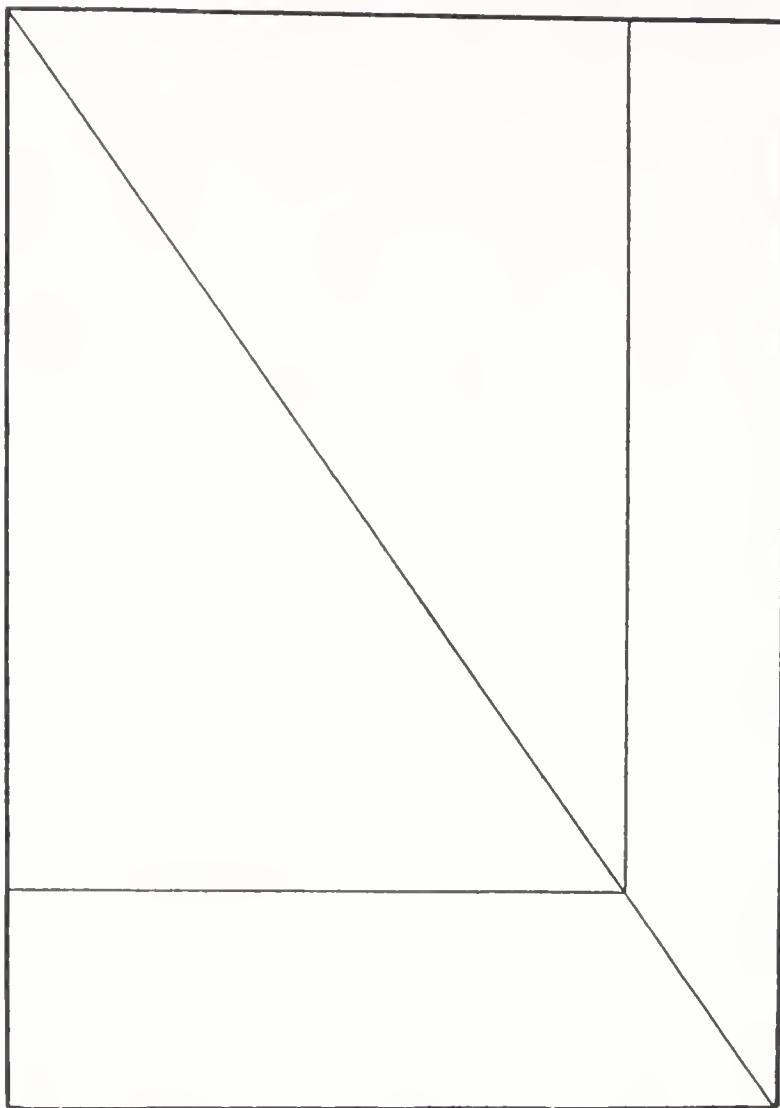


FIG. 45.—Method of determining relationship between the page and the type area to be printed upon it.

text-matter width from the upper left-hand corner, and dropping a vertical line to intersect the diagonal—where these two lines meet is the depth to which the text matter should be set (*see* Fig. 45).

#### FOOTNOTES AND HANGING SHOULDER NOTES

Where the manuscript includes notes to be inserted either at the foot of the page or as hanging shoulder (or marginal) notes, careful consideration must be given to the fact that in

the case of footnotes the depth of the text page (including the notes) must not exceed the predetermined measurement; that the type used for the notes should be at least 2 points smaller than that used for the rest of the page and separated from the text matter either by a blank line or by a short fine-faced rule ranged to the left-hand side.

In the event of hanging shoulder notes being specified, the width of the text-matter page must be accordingly reduced

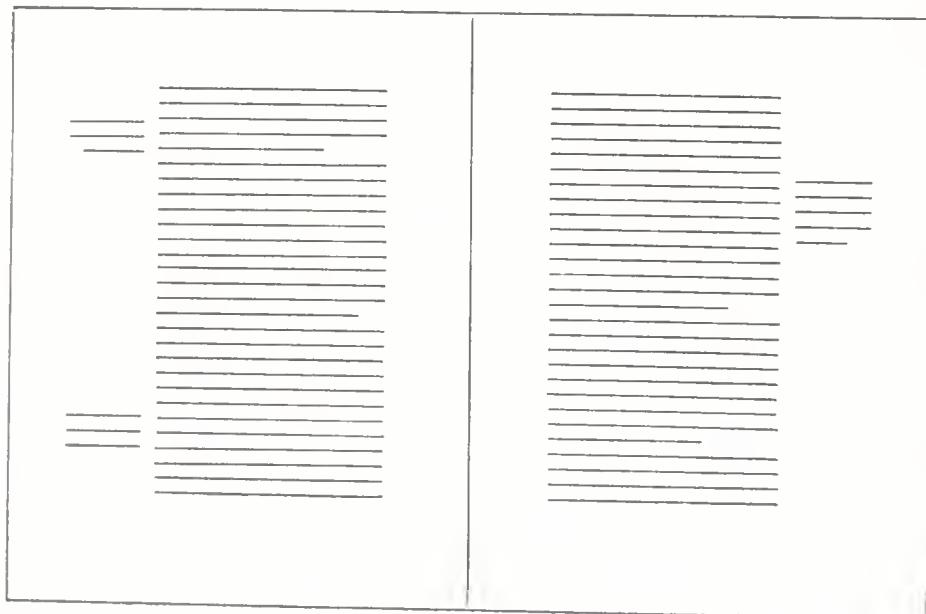


FIG. 46.—Double-page spread of a quarto book. Note generous margins allowing for hanging shoulder notes.

to permit their inclusion. As with footnotes, the typeface should be reduced by not less than 2 points and the notes set to range to the right or left as the case may be. Reference to Fig. 46 will illustrate the placing of such notes and the need for an increased marginal allowance for their accommodation.

### ILLUSTRATIONS

The correct placing of illustrations is very important if the finished book is to conform to accepted standards of book production.

For preference, the block should be sandwiched within the paragraph of text relating specifically to that illustration. If this is not possible, then the block should directly precede (or follow) the relative portion of copy.

Obviously, if the illustration is fairly large it may not always be possible to accommodate both text and diagram on the same page; in such circumstances it should be made to occupy a position facing the copy, thereby enabling the reader to refer both to the picture and to the explanatory notes without having to turn to another page. However, where the illustrations are printed on a paper which differs from that used for the body of the text, then it may not be possible to place the illustrations so conveniently.

### Captions

There is no hard-and-fast rule governing the manner in which captions are set, but it is not usual to compose captions in the same size of type as used for the text of the book being compiled—this would be misleading not only to the reader but also to the compositor “making-up” the pages.

The generally accepted practice is to reduce the type body size by two points and to set the caption either in the same roman face as that of the text or, to create an even greater distinction, to use the related italic face.

### PAPER

#### Type and Paper

In order to obtain the best results from any typeface it is necessary to consider seriously the effect that using the

wrong quality of paper may have on the resulting printed image.

Our attention, therefore, must be directed to the elementary analysis of paper, which may be divided into two distinct categories—*coated* (or art) papers, which during manufacture are given a highly polished (calendered) coating of china clay; and *uncoated* papers, which receive no such additional treatment.

Coated papers were introduced to enable the printing industry successfully to reproduce the subtle tonal gradations of half-tone blocks, which are composed of thousands of minute dots. An uncoated paper, due to its uneven surface, would mar the faithful reproduction of a picture either by not presenting an even surface to the block or, in the printer's endeavour to overcome this problem by applying excessive impressional strength, by causing too heavy a deposit and squash of ink—resulting in a muddy-looking picture.

Coated papers are therefore essential for the reproduction of fine half-tone blocks, but unfortunately it is often necessary to accompany the illustration with text matter, and the glossy surface is by no means flattering to the majority of typefaces, generally thinning down the type to only a fraction of its normal weight. Where the marriage of type, paper, and blocks is unavoidable the use of either Times, Plantin, or possibly Bembo is to be recommended.

At this point it is opportune to mention that all types (especially those which fall in the "Modern-face" category) are prone to dazzle when printed on coated stocks, which should therefore be avoided where possible—the more so where much text is involved, as eye strain may be caused by continuous reading of such material.

Uncoated papers are categorised by the manufacturers as

*antique* (rough) and *calendered* (smooth). Both may be further divided into hard- or soft-sized papers, depending on the amount of animal size in or on them. A hard-sized paper is firm to the touch, has little porosity, and when shaken produces a “tinny” rattle. Alternately, a soft-sized paper (newsprint, for example) is limp, porous, and does not rattle to the same extent as a hard-sized paper.

Having described the characteristics of the main paper groups, let us turn our attention to their influence on the typeface to be printed and the need for careful selection.

Antique papers examined under a microscope will be seen to present exceedingly undulating surfaces. To enable the type to reach both the high- and low-lying areas of such stocks it must be impressed with sufficient force to flatten the humps and reach down into the hollows. Naturally, such pressure will cause an indentation of the typeface to be made in the paper surface with a subsequent thickening of the lines, distorting the face and making the reproduction of hair lines as displayed by “Modern” typefaces virtually impossible.

The conclusion, rightly, must be drawn that antique papers require the use of “Old-face” types. In support of this evidence, it is of interest to note that Caslon Old Face was specifically designed for printing on damped, hand-made paper, in a crude screw press—an operation which could not fail to thicken the strokes. To this day Caslon Old Face is still seen to best advantage on antique stock.

On the other hand, “Modern” type faces reproduce best on smooth (though not coated or shiny) stocks. Such papers require but the lightest of impression—sufficient only to impart all the ink from the face of the type to the paper surface—and little or no indentation should be visible. The resulting image should be clean, sharp, and undistorted.

### Blocks and Paper

Line illustrations, being simple black-and-white reproductions having no gradations of tone other than those produced by dots, cross hatching, or variations of line thickness, are virtually suited to all grades of paper.

Half-tone blocks present a more complex problem due to the fact that they are composed of thousands of minute dots, each varying in size according to the tonal gradation of the area of the illustration to which it relates. As has been explained above, therefore, it is generally necessary to use some form of coated paper where fine-screen blocks are to be printed with the text.

In the absence of a recognised guide to this subject the following suggestions as to paper and screen combinations may be considered.

Blocks up to 75-screen are suitable for printing by rotary newspaper work or on other cheaper printing. Machine-coated or smooth cartridge papers require blocks of 85- or 100-screen ruling; while for rulings of 120 and above the use of a coated paper is essential.

The foregoing problems relating to suitability of paper and screen ruling and etching depths, etc., are at present under consideration and research by the Printing and Allied Trades Research Association.

### Standard Sizes of Paper and Boards

In the previous chapter and again in this chapter reference has frequently been made to certain paper sizes and their subdivisions. For the assistance of those who are unaware of these measurements, drawn up in 1937 by the British Standards Institute in association with a representative committee of paper suppliers and users in Great Britain and the Dominions, the following tables and diagrams are included:

## CUT CARDS

	Inches		Inches
Thirds	$1\frac{1}{2} \times 3$	Correspondence	$3\frac{1}{2} \times 4\frac{1}{2}$
Extra Thirds	$1\frac{3}{4} \times 3$	Double Small	$3\frac{5}{8} \times 4\frac{3}{4}$
Smalls	$2\frac{3}{8} \times 3\frac{5}{8}$	Double Large	$4\frac{1}{2} \times 6$
Large	$3 \times 4\frac{1}{2}$	Quad Small	$4\frac{3}{4} \times 7\frac{1}{4}$
Post Cards	$3\frac{1}{2} \times 5\frac{1}{2}$	Quad Large	$6 \times 9$

## WRITING PAPERS

Foolscap	$13\frac{1}{4} \times 16\frac{1}{2}$	Large Post	$16\frac{1}{2} \times 21$
Small Post	$14\frac{1}{2} \times 18\frac{1}{2}$	Small Medium	$17\frac{1}{2} \times 22$
Post	$15\frac{1}{4} \times 19$	Medium	$18 \times 23$
Pinched Post ( <i>as Small Post</i> )		Small Royal	$19 \times 24$
Sheet and $\frac{1}{3}$ Cap.	$13\frac{1}{4} \times 22$	Super Royal	$19 \times 27$
Sheet and $\frac{1}{2}$ Cap.	$13\frac{1}{4} \times 24\frac{3}{4}$	Imperial	$22 \times 30$
Small Demy	$15\frac{1}{2} \times 20$		

## PRINTING PAPERS

Large Foolscap	$13\frac{1}{2} \times 17$	Large Royal	$20 \times 27$
Crown	$15 \times 20$	Double Foolscap	$17 \times 27$
Large Post	$16\frac{1}{2} \times 21$	Double Crown	$20 \times 30$
Demy	$17\frac{1}{2} \times 22\frac{1}{2}$	Imperial	$22 \times 30$
Medium	$18 \times 23$	Double Demy	$22\frac{1}{2} \times 35$
Royal	$20 \times 25$	Double Royal	$25 \times 40$

## BOARDS

Royal	$20 \times 25$	Large Imperial	$22 \times 32$
Imperial	$22 \times 30$	Index	$25\frac{1}{2} \times 30\frac{1}{2}$
Postal	$22\frac{1}{2} \times 28\frac{1}{2}$		

**Paper Subdivisions**

Fig. 47 shows some of the more regular subdivisions of paper. As the name implies, these are the normal sizes obtained by folding or guillotining the paper in half across its longest edge and repeating the process until the ream is reduced to the required measurement.

Fig. 48 shows the subdivisions produced by cutting the paper across the *shortest* edge, and by guillotining into thirds.

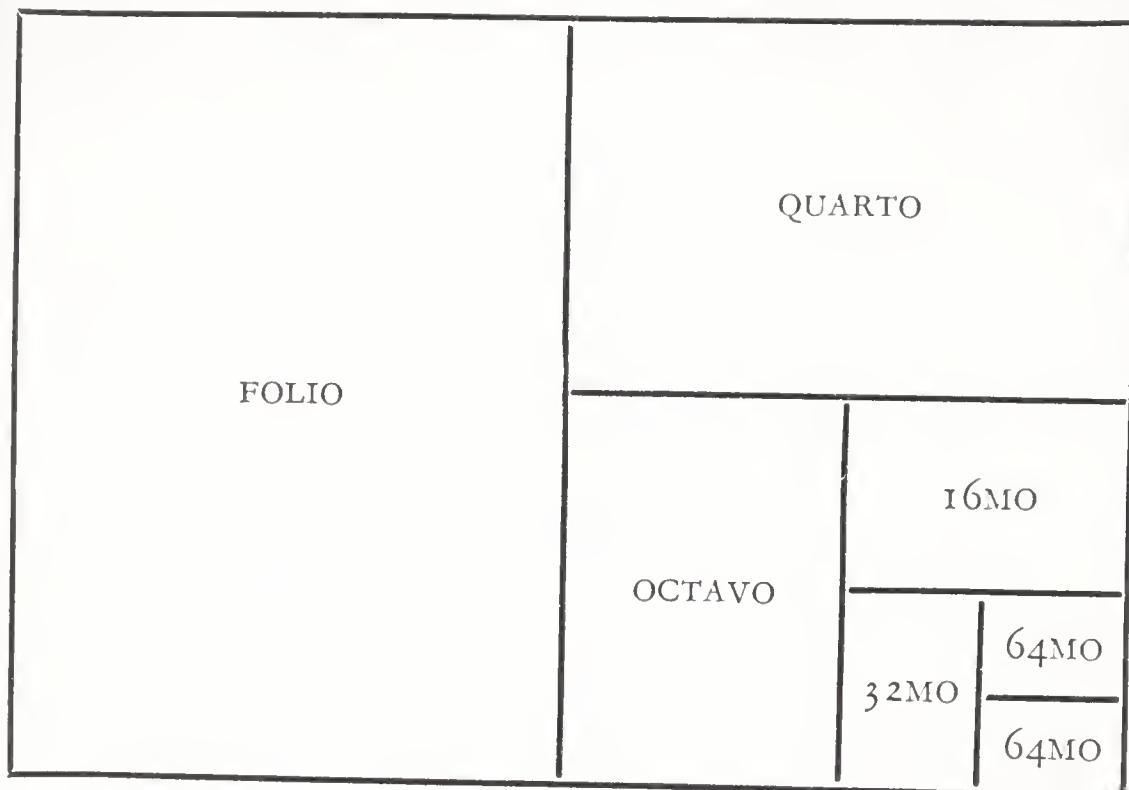


FIG. 47.—The more orthodox subdivisions of paper obtained by cutting in half across its *longest* edge.

The following measurements represent the standard untrimmed subdivisions of paper sizes to folio, quarto, sixmo, octavo, and sixteenmo:

Size	Folio	Quarto	Sixmo	Octavo	Sixteenmo
Foolscap .	$13\frac{1}{4} \times 8\frac{1}{2}$	$8\frac{1}{2} \times 6\frac{3}{4}$	$6\frac{3}{4} \times 5\frac{2}{3}$	$6\frac{3}{4} \times 4\frac{1}{4}$	$4\frac{1}{4} \times 3\frac{3}{8}$
Crown .	$15 \times 10$	$10 \times 7\frac{1}{2}$	$7\frac{1}{2} \times 6\frac{2}{3}$	$7\frac{1}{2} \times 5$	$5 \times 3\frac{3}{4}$
Large Post .	$16\frac{1}{2} \times 10\frac{1}{2}$	$10\frac{1}{2} \times 8\frac{1}{2}$	$8\frac{1}{4} \times 7$	$8\frac{1}{4} \times 5\frac{1}{4}$	$5\frac{1}{4} \times 4\frac{1}{8}$
Demy .	$17\frac{1}{2} \times 11\frac{1}{4}$	$11\frac{1}{4} \times 8\frac{3}{4}$	$8\frac{3}{4} \times 7\frac{1}{2}$	$8\frac{3}{4} \times 5\frac{5}{8}$	$5\frac{5}{8} \times 4\frac{3}{8}$
Medium .	$18 \times 11\frac{1}{2}$	$11\frac{1}{2} \times 9$	$9 \times 7\frac{2}{3}$	$9 \times 5\frac{3}{4}$	$5\frac{3}{4} \times 4\frac{1}{2}$
Royal .	$20 \times 12\frac{1}{2}$	$12\frac{1}{2} \times 10$	$10 \times 8\frac{1}{3}$	$10 \times 6\frac{1}{4}$	$6\frac{1}{4} \times 5$
Imperial .	$22 \times 15$	$15 \times 11$	$11 \times 10$	$11 \times 7\frac{1}{2}$	$7\frac{1}{2} \times 5\frac{1}{2}$

Machine-made papers are manufactured in a continuous web and, for the larger newspapers, are supplied in enormous reels. The general printing industry, however, is supplied with the paper cut to one of the standard sizes already mentioned. These cut sheets are invariably packed in reams (unlike boards which are packed and sold in centums—100

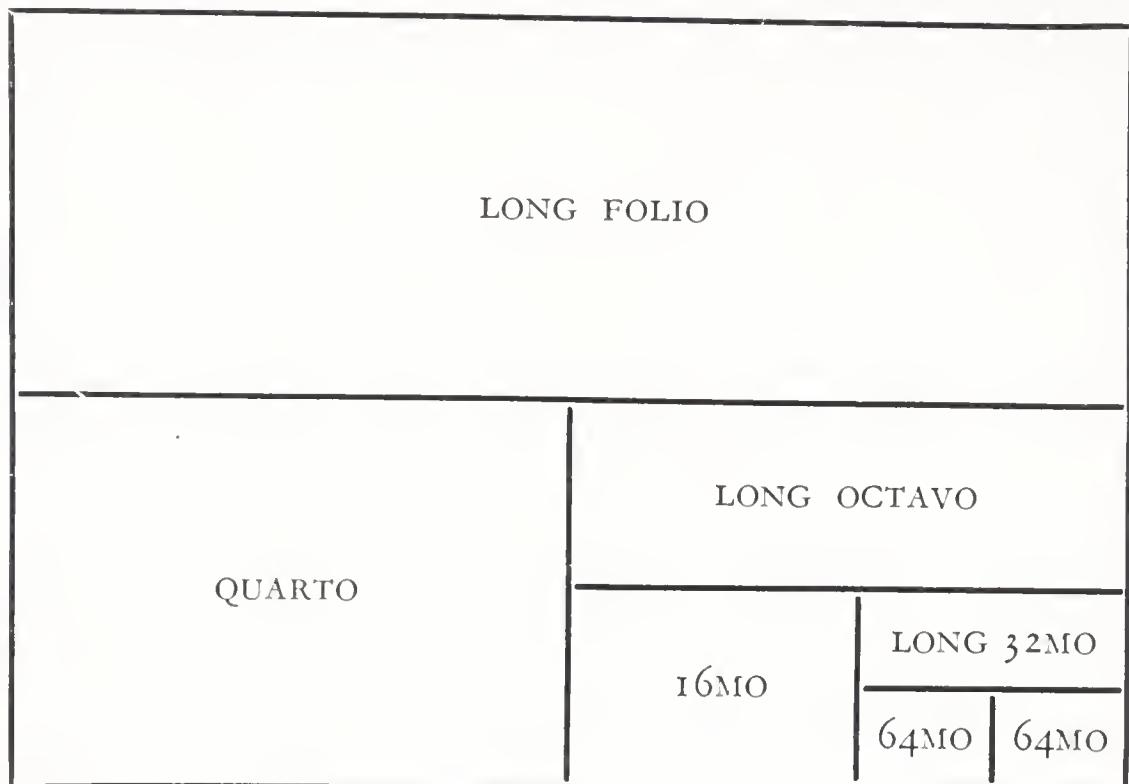


FIG. 48 (a).—Unorthodox subdivisions of paper obtained by cutting in half across its *shortest* edge.

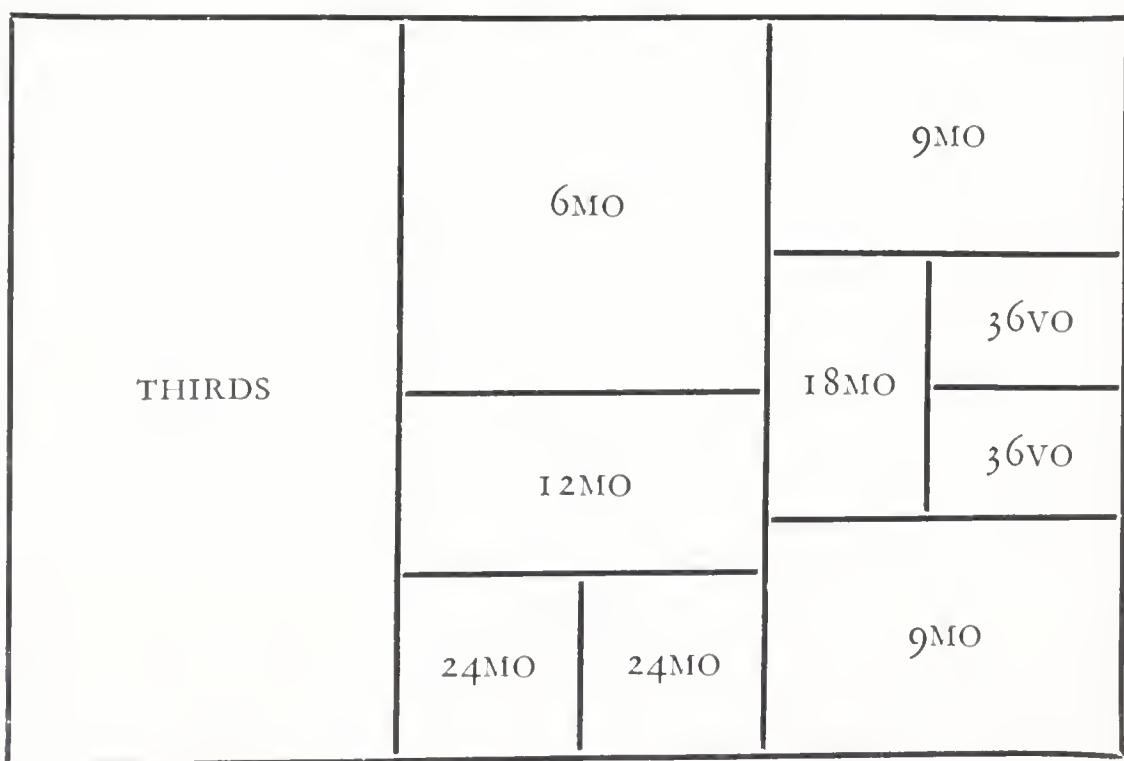


FIG. 48 (b).—Standard paper subdivisions to thirds, sixmo, etc.

sheets). Officially a score of quires = 480 sheets; but, as with the standardising of paper sizes, it was also decided to make the standard ream consist of 500 sheets; unfortunately, an additional complication is created by the fact that book papers are sometimes ordered in reams of 516 sheets, the additional 16 sheets being theoretically an allowance for wastage.

The designer is not usually concerned with the calculation of the quantities of paper required for a book. However, such knowledge may be of value on occasion, and a simple problem is given below.

Consider having to calculate the number of reams required for 3000 copies of a 256-pp. Crown octavo ( $7\frac{1}{2}$  in.  $\times$  5 in.) book to be printed in 16-page formes on Double Crown stock.

Commence by ascertaining how many sheets are needed to produce one book, multiply this answer by the quantity to be produced, and divide by the number of sheets in a ream.

It is important to remember that each sheet of paper has two sides; this no doubt appears to be stating the obvious, but it has proved the stumbling block of many people in the past, and will doubtless remain so in the future.

As the stock is in Double Crown (20 in.  $\times$  30 in.), each sheet, when perfected, will produce 32 pages (16 on either side!); this divided into 256 reveals that only 8 sheets are needed per book. Therefore, 8 (sheets)  $\times$  3000 (books)  $\div$  500 (sheets in a ream) = 48 reams of Double Crown. An allowance for spoilage must usually be added, unless the paper is ordered in 516s (*see above*).

#### STUDY QUESTIONS

1. Describe in your own words what you understand by the term "Golden Mean."
2. The page area for a new book has been specified as  $12\frac{1}{2}$  in. by  $7\frac{1}{2}$  in. Calculate the page type area suitable for a de luxe

edition and draw a neat double-page spread showing where the type matter is to be placed.

3. A Crown quarto book having a trimmed size of  $9\frac{3}{4}$  in. by  $7\frac{1}{4}$  in. has been allocated a page type width of 5 in. (or 30 ems 12 point). By means of a neat diagram, illustrate how the depth of the type page can be determined and state this measurement to the nearest pica.

4. Explain the difference between footnotes and hanging shoulder (or marginal) notes and suggest the size of type you would use—assuming the text matter to be set in 10-point Plantin.

5. The normal depth of the text matter in the book you are paging-up is 30 picas. If the text is set in 12-point Bembo what will be the depth of a page requiring the inclusion of six lines of footnotes? State the reason for your answer.

6. Describe in your own words the basic rules to be observed concerning the placing of illustrations in bookwork.

7. The book under consideration is to be set in 10-point Garamond. What size of type would you specify for the captions beneath each illustration?

8. What is meant by the terms “calendered” and “antique” as applied to paper surfaces?

9. Why is it considered inadvisable to attempt the printing of a 120-screen half-tone block on other than coated art stocks?

10. Is Bodoni a suitable typeface for use on coated paper? Give reasons for your answer.

11. A medical book requires fine-screen blocks to reproduce very detailed photographs. Obviously this calls for coated art paper—but there is also a vast quantity of text. Describe two different ways of resolving this problem in the light of eye strain, suitability of type to paper, and so forth.

12. A paper-backed “thriller” novel has a few line illustrations interspersed among the text. Normally such books are printed on a cheap newsprint type of stock. Will the inclusion of these blocks effect the quality of paper required? State the reason for your answer.

## CHAPTER NINE

# THE FINAL STAGES

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**I**N the two previous chapters comprising this section on book design consideration has been given to the many aspects and problems to be deliberated on up to the stage of page make-up. The aim of this chapter, therefore, is to discuss the final steps leading to the production of a finished book.

### PRELIMINARY MATTER

On completion of the text there still remain for the book designer the vitally important factors referred to as the preliminaries. These are the pages preceding the text matter, and comprise some (or all) of the following:

- Bastard Title (sometimes called the half-title)
- Advertisement (now mainly obsolete)
- Frontispiece
- Title
- Copyright
- Dedication
- Foreword
- Preface
- Contents
- List of Illustrations
- Introduction

These preliminary pages are important for two reasons:  
(i) they inform the prospective reader as to the contents of the book, the person by whom it was written, the name of

the publisher, and so forth; (ii) it is within these few pages that the designer finds a means of typographical expression unfettered by having to cram a given number of words into a specified type-page area.

### Title Page

Of all the pages—be they text, preliminaries, or end matter (pages following the text)—the one that offers the greatest scope to the designer is probably the title page.

Seldom consisting of more than ten or twelve lines, the information to be displayed should contain the following items—preferably in this order:

- (i) the title of the book;
- (ii) name of the author and/or translator;
- (iii) by whom it was illustrated;
- (iv) name and address of the publisher;
- (v) date on which published.

Armed with this information, the layout of the page is now a matter only of displaying the wording attractively and in conformity with the type of book under construction.

In normal circumstances the typefaces selected will be of the same family as that used for the text matter, though naturally not of the same size. Where possible, it is considered advisable to make at least one line occupy the full width of a text page, and for the top and bottom lines to occupy the same position as the first and last lines of each text page; by so doing, a uniformity of page type areas is expressed which unobtrusively links the displayed title page with the text.

The appeal of a title page may be enhanced by the judicious use of a display typeface for the main line and/or a plain

or decorative border (*see* Fig. 49). If the subject of cost is not of paramount importance, then the introduction of a second colour can be of immense value in the design of a title page.

With regard to content, it may be desirable to design the title page in typefaces bearing no relation whatsoever to that used in the text but calculated to set the mood or period with which the book deals. A book on ballet, for example, might well be introduced by a title page set in a classical script, whereas an account of Gutenberg's invention of printing could most fittingly be preceded by a title page set in a fifteenth-century Gothic typeface.

In the study of title page designing it is wise to examine the title pages of books on a wide variety of subjects. From the result of such scrutiny it will be possible for the industrious reader to compile a list of subjects, related typefaces, and thumbnail sketches of the most appreciated (or disliked) layouts which will be extremely useful in future years.

## BINDING

### Edition Case Binding

At this point in the study of book production—from a typographical viewpoint only—it is opportune to consider various aspects of bookbinding (the methods of fastening sheets or sections together and attaching covers) and the materials suitable or available for this process.

First and foremost it must be remembered that there are many types of “binding”; ranging from beautifully tooled works of art executed in pure gold and silver on genuine leather to the simple drawn-on paper covers of a sales catalogue or railway guide.

Contemporary styles of binding may be classified under

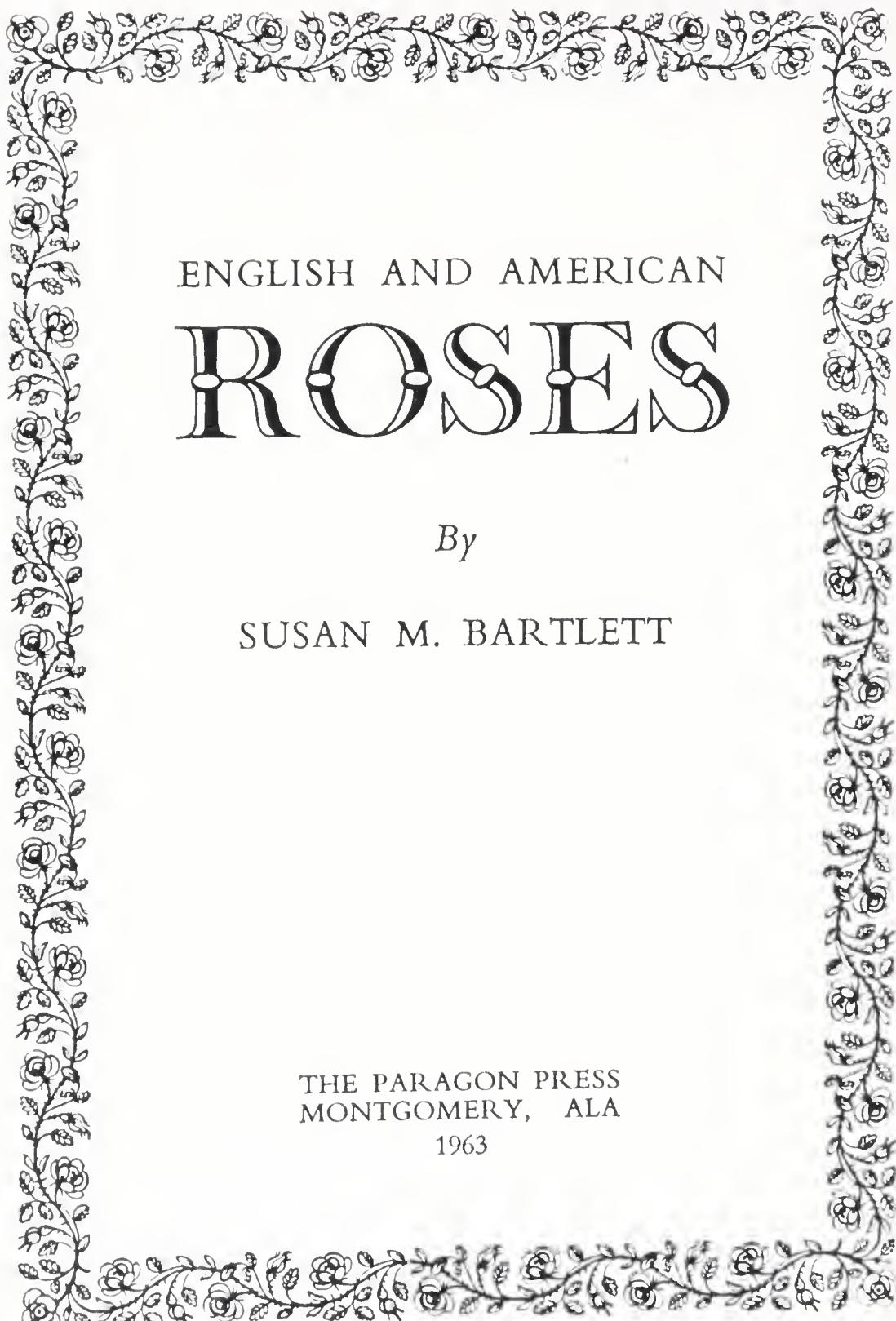


FIG. 49.—Title page enclosed by a decorative border and using a display face for the main line.

three distinct headings: *true binding* (signifying the application of the highest skills of the craftsman binder in the hand-production of a single book); *case binding* (the mechanical binding in machine-made covers), and *wrappering* (or perfect binding) in paper covers.

For the purpose of this chapter it is intended only to deal with edition case binding, as this is the principal method in use at the present time for the binding of books for the general public.

Obviously, mechanisation of the age-old art of book-binding has eliminated much of the craftsmanship, but it need not eliminate individuality, and a cloth cover (as encasing this book) is perfectly suited to the anticipated life of the book and is admirably in keeping with modern trends.

The materials employed in case binding may be either cloth or paper, depending on the quality of the book being constructed. Modern methods of manufacture have made it possible to produce reasonably durable papers which, both in appearance and feel, emulate cloth; and cloth can also be processed in such a manner as to resemble materials such as morocco, pigskin, or calf.

To some of us the use of such "imitations" may appear distasteful, perhaps from a misguided sense of loyalty to the materials originally used. But if one reflects on other products much the same wind of change will be found to have blown the cobwebs from their traditional practices too. *Plastic* has replaced leather in many instances (shoes, jackets, handbags, etc.); *nylon* now enters our life as shirts, stockings—even fur coats; and the processes our "fresh garden produce" endures on its way to the table are almost unbelievable—yet we accept without question the quality of these goods. So be it, then, with the bookbinding cloths and

papers. They are functionally efficient and, in the main, give very satisfactory results.

One distinct advantage of these modern materials is that, being man-made, they are sufficiently stable in thickness to enable them to be printed (where this is desired) on automatic presses either before or after being made up into cases.

In choosing the colour of cloths, green should be avoided wherever possible, as it has a tendency to fade, especially in the lighter shades. This is due not only to the action of sunlight but also to the known fact that certain acids necessary to the bookbinder cause discolouration of one or other of the primary colours—green, being composed of two primaries (blue and yellow), is therefore susceptible to this effect.

### Blocking of Case

Where a book cover is to be ornamented or lettered, either in gold or silver, a further process known as “blocking” is required. This operation is carried out with the aid of a gas or electrically heated press into which a brass die of the particular wording or design is attached. The cases, covered with a sheet of specially prepared gold, silver, or coloured foil, are fed one at a time into the press and, on the application of pressure, the heated die fuses the gold or silver to the case in the impression of the die. After blocking, excess particles of gold, etc., adhering to the case are carefully removed.

The design of blocking should be kept reasonably simple, and perhaps the safest course to steer is to follow the general lines of the title page design—thereby creating continuity.

Above all, avoid complicated designs and small lettering, as legibility is almost certain to be sacrificed if a typeface of

less than 12-point is specified—especially so if lower-case characters are called for.

### Blind Tooling

Another method of decorating a cover is by blind tooling. This is the term applied to the blocking as previously described, but without the use of any form of colour—the design being simply, yet permanently, impressed into the cover. Again it must be emphasised that the design, as with gold or silver blocking, should be uncomplicated and capable of reproducing a sharp, clean impression; this does not mean that the design has to be dull or weak, but rather that it presents a challenge to the artist to overcome mechanical limitations with human ingenuity.

### BOOK JACKETS

The paper dust jacket is probably the first thing to be seen by the public at large, and the eventual sale of the book may depend to a very great extent on the visual impact of this pictorial or typographic design.

Colour, as described in Chapter Eleven, is of major importance. A careful choice of colours and design will arrest the gaze of casual purchasers—compelling them to take up and inspect the book by beauty, arrogance, or even brutal assault on the mind. Once having picked up the book, their interest in it is aroused, and that is by no means an easy achievement.

The design may be spread over the entire jacket, or it may be confined to the front cover only, the reverse being used to introduce the author or to carry advertising material at the discretion of the publishers. Naturally it is not economically possible to reproduce these jackets in their full colours, but a visit to your local book-shop will provide

much food for thought on this subject, and will give some idea as to the different styles of treatment used by modern book designers.

#### STUDY QUESTIONS

1. Why is it considered necessary to have the so-called “preliminary pages” in addition to the text pages of a book?
2. List, in its correct sequence, the information which should appear on a title page.
3. Redesign the title page of this book assuming the reprint to be in two colours and the new size to be Crown quarto. Mark up the layout with full working instructions.
4. In what way does “edition case binding” differ from “true” or traditional bookbinding?
5. State the various considerations to be borne in mind when creating a design for gold blocking or blind tooling.
6. Design a new dust jacket for this book, but in Demy octavo “landscape” format. Use not more than three colours.

*Section IV*

*General Aspects of Design  
and Layout*



## CHAPTER TEN

# DECORATIVE MATERIALS

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PRINTERS invariably stock a large assortment of rules and ornaments with which to “decorate” various works entrusted to their care. Unfortunately, many printers have little knowledge regarding the correct use of these materials and tend to scatter them indiscriminately throughout the job, giving no consideration to the suitability or effectiveness of the ornament or its relationship to the typefaces being used in the particular project.

Before considering the various ways in which rules and ornaments can be used, remember that it takes no longer to compose a *good* job than it does a *bad* one—and the result will be more gratifying not only to the customer but to the production team as a whole.

### PLAIN AND DECORATIVE RULES

The use of rules, either as a border or purely as a form of decoration, can make or mar a job due entirely to the aesthetic appreciation or otherwise of the layout artist or compositor.

Where single  $1\frac{1}{2}$ -point brass rules are the only materials available, remember that they often have a fine and a full face on the reverse edges: make use not only of this fact, but also remember that it is by no means necessary to have the same white space (leading) between each rule. Vary the spacing, vary the face from light to heavy, and thereby avoid monotony of tone.

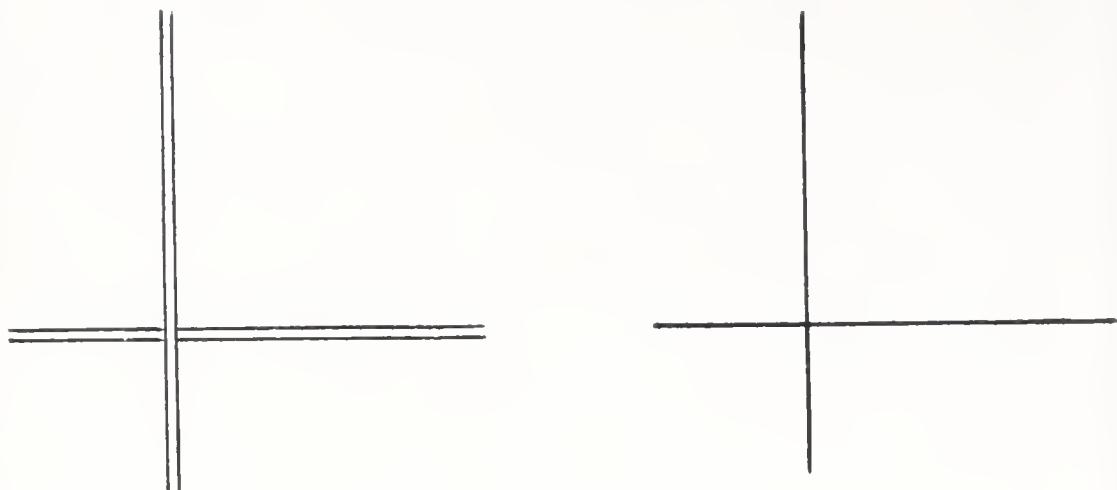


FIG. 50.—An example of “Oxford corners.”

When used purely as a form of decoration rules can be set to make what are referred to as “Oxford corners.” This treatment of a page (*see* Fig. 50) is very effective where there is insufficient copy to fill the full page area adequately.

In the case of the rules being required to form a border entirely enclosing the printed copy, *always* ensure that the corners are mitred and not merely butted together. Admittedly this may take a few extra minutes, but the result is well worth the time and trouble. In the larger sizes, 6 point and upwards, brass rules are invariably supplied in sets complete with mitred corner pieces which make an absolutely perfect join (*see* Fig. 51).

In addition to the plain rules there are also available a host of decorative and swollen rules suitable for almost any occasion. One of the most popular during recent years has been the “Bodoni Rule,” recognised by its fine pointed ends and heavy swollen centre. Eminently suited to typefaces with fine hair-line serifs and bold main strokes, it is, however, too bold for use with delicate typefaces and, due to its serifed character, should not be used with a sans-serif fount.

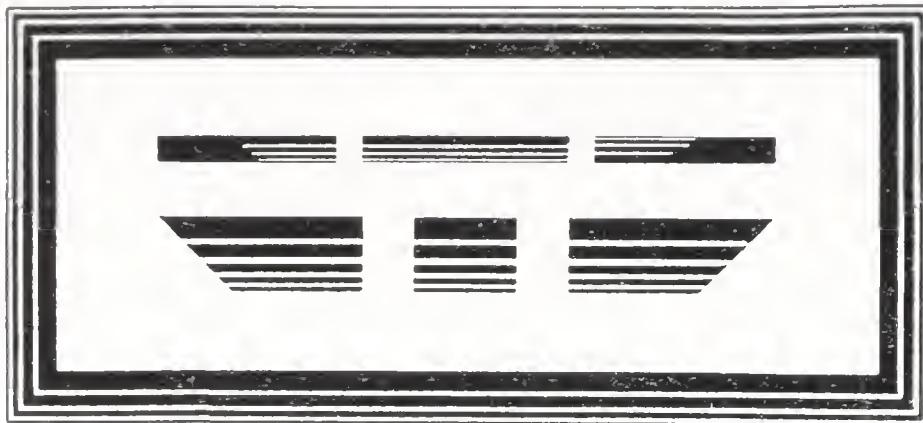


FIG. 51.—An example of 6-point, 12-point, and 18-point mitred rule borders. In particular note the perfect joining of the corners.

A variation of this rule is the one used under each chapter heading throughout this book. This rule is far more delicate, due mainly to the engraving of the centre portion and is well suited to any type face other than sans serif.

Where a really decorative rule is needed there are now available many excellent “combination dashes” as they are termed. Composed of two, three, or more separate units, these dashes can be built up as required and, if printed in a second colour, are most effective and attractive (Fig. 52).

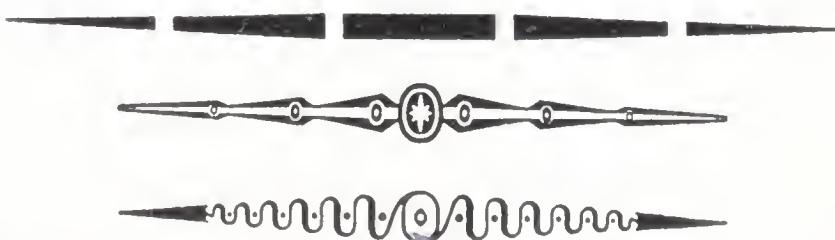


FIG. 52.—Combination dashes. The upper one is opened out to show the component parts.

Occasionally, where rules are to be placed round a certain portion of copy to form a panel, it can often be made more eye-catching by using rules of differing thickness and setting them to give a three-dimensional effect (*see Fig. 53*).



FIG. 53.—A simple three-dimensional effect in plain rules.

#### BORDER MATERIALS AND ORNAMENTS

In the field of border materials there appears to be a dearth of new and original designs. The majority of single-unit (Monotype) or strip borders (Linotype) have remained almost unchanged for many years, and consist of stars, rosettes, diamonds, zig-zags, etc. (Fig. 54).

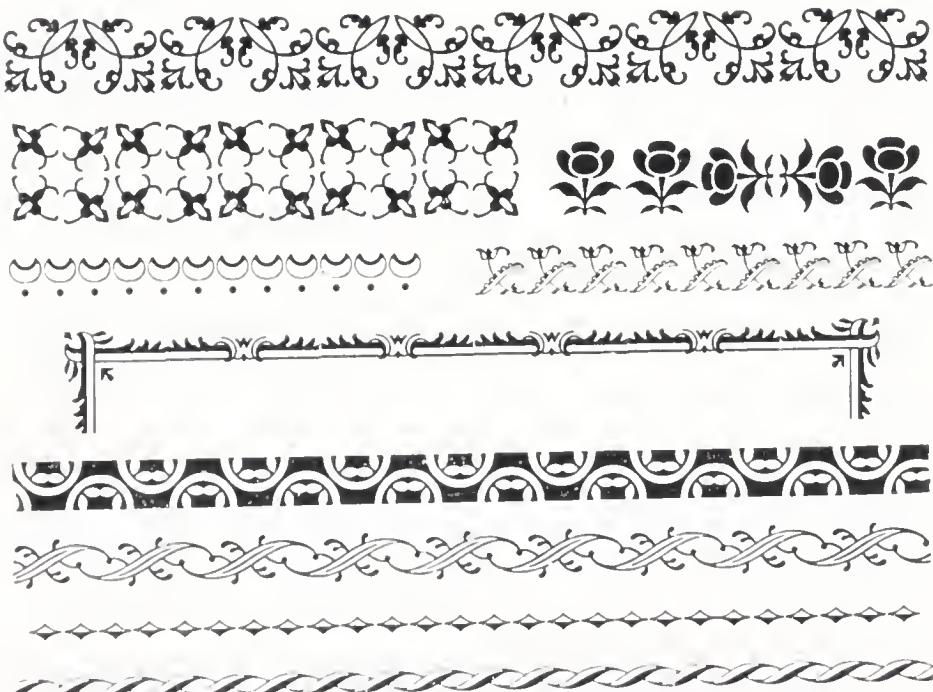


FIG. 54.—Typical single-unit and strip borders still employed by the average English printer.

To the printer or designer who is not prepared to accept these “run-of-the-mill” ornaments, there are quite a number of contemporary borders now being produced by the various type-founders, and it is well worth the trouble to find them.

Do not, however, obtain the impression that all old border materials and ornaments are unsuited to present-day needs. One richly designed single-unit border issued by Messrs. Stephenson, Blake & Co. Ltd of Sheffield is an eighteenth-century revival and is, in point of fact, still cast from the original hand-cut punches. Though somewhat large, this border (*see Fig. 55*) is shown to excellent advantage when printed in a pastel colour.



FIG. 55.—Though rather overpowering in black, this border (which joins to perfection) is very effective when printed in colour.

Where a very delicate border or ornament is required, possibly to accompany a light typeface or a copperplate script, Messrs. Riscatype Ltd. issue a series of Madonna Ronde ornaments (*see Fig. 56*). These ornaments can be employed to create many different shapes, to separate items on a menu card, to form a cartouche, and so on.

#### ENGRAVINGS

Thomas Bewick (1753–1828) was a noted wood-engraver, and many of the beautiful works he produced have since been copied as line blocks and solid mounted. Supplied by



FIG. 56.—A sample of the Madonna Ronde ornaments now available.

Messrs. Stephenson, Blake & Co. Ltd., these delightful illustrations are admirably suited to the decoration of title pages, invitation cards for exhibitions of eighteenth-century wood-engravings, and so forth.



FIG. 57.—A Bewick wood-engraving.

The use of ornaments has, however, almost completely disappeared during the past few decades, and many fine units designed during the Renaissance period are now little more than museum pieces. This does not mean to say that they will not be revived and once more used to adorn some future work worthy of their grace and charm.

#### STUDY QUESTIONS

1. What type of rule would you suggest to accompany a line of Old Face Open, and for what reason?

2. During the next week find as many examples as possible of decorative swollen rules.
3. What do you understand by the term "Oxford corners" and "mitred corners"?
4. By your own efforts obtain copies of not less than three borders suitable for use with serifed typefaces, and another three borders suitable for use with either sans serif or Egyptian founts.
5. Describe the steps you would undertake to avoid monotony in the use of plain  $1\frac{1}{2}$ -point rules.
6. A small amount of wording contained in an advertisement is to be given extra prominence. You cannot use a bigger or heavier typeface, so what do you suggest in the circumstances?

## CHAPTER ELEVEN

# OPTICAL AND PHYSICAL ASPECTS OF COLOUR

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**B**EFORE attempting to design any article of printed matter to be produced in more than one colour, or on a tinted stock instead of the more usual white, it is essential to understand and appreciate the different values, both optical and physical, of the numerous colours used in general printing establishments, for on this knowledge can depend the success or failure of the finished design.

### THE VALUES AND CONSTRUCTION OF COLOUR

Red is the warmest of the three primary colours, and through this warmth suggests one of man's most deadly enemies—fire. It is the colour which symbolises blood, danger, energy, and excitement; but if used in excess can be extremely annoying and repulsive.

Yellow is the colour which, after white, reflects more light than any other colour. It is therefore symbolic of the sun and has a warm, attracting effect. Unfortunately, unless printed in a large or heavy typeface, the wording will appear to recede into the background.

Blue, the coldest of the three primaries, is a tranquil, sooth-ing colour used to represent the sky, distant mountains, the vast oceans, steel, ice, etc. Care must be taken when selecting the shade of blue to be employed, for if too

dark it will be difficult to distinguish between it and the accompanying black type.

Orange (composed of red and yellow) is a warm, sunny colour, which attracts attention but, due to the yellow content, does not possess the irritating and exciting action of red.

Green (composed of blue and yellow) has the power to represent youthfulness, nature, and tranquillity. Used in moderation, it can be very effective. Unfortunately it is seldom used by contemporary designers.

Violet (composed of red and blue) is the colour which for thousands of years has been used to symbolise dignity, mysticism and power, royalty, and religion. It is therefore reserved almost exclusively for use on printed matter concerning the pomp and ceremony of royal occasions; or Services of Remembrance or Dedication.

Having considered some of the optical aspects of colour, the time is now opportune to delve into their physical construction.

Printers, generally, refer to the primary colours as red, yellow, and blue, and it is from a combination of two or more of these basic colours that all other colours are produced. By mixing red and yellow together, orange is created; mixing blue with yellow produces green; and red mixed with blue makes violet. These three (mixed) colours are referred to as secondaries.

Having already mentioned the primary and secondary colours, let us now turn our attention to the intermediaries. As the term implies, these colours (of which there are six) lie intermediately between the three primaries and the three

secondaries. Intermediate colours are obtained by adding an extra quantity of one of the two primaries already used in producing a secondary. For instance: orange is composed of red and yellow—if we increase the yellow content yellow-orange is produced. Conversely, if the red content is increased red-orange is obtained. Reference to the colour wheel diagram (see Fig. 58) will help to clarify this explanation.

#### HUE, TINT, AND SHADE

By the word hue is meant the actual name of a specific colour, be it red, blue, green, or so on, as distinct from the habit of describing certain colours as *mushroom*, *coral pink*, or *sea-green*. There are so many different mushrooms, and surely the sea is not really green! It is therefore necessary to be more specific when naming a colour for the printer, and for that reason the name of the hue as shown on the colour wheel should be employed.

The twelve colours (or hues) of which the colour wheel is composed are all obtained either by the pure primary colours or by their intermixing one with the other. These, then, are hues in their own right, not having been adulterated by the addition of white (to form a tint) or black (to form a shade). In other words, a *tint* is a lightening of a hue and the raising of its colour value in the scale from dark to light, whereas a *shade* is the darkening of a hue and the lowering of its colour value.

#### THE LAW OF JUXTAPOSITION

At the beginning of this chapter mention was made of the problems to be considered when printing the design on tinted stock instead of white. To appreciate the importance of this we must study the following facts.

To the human eye a blue-green appears bluer on a green ground, whereas the identical colour would appear greener on a blue ground. Also, a colour seen on an intense ground appears greyed—yet the same colour on a greyed ground would appear intense (*see* Fig. 59).

Where the background is to be pure white, however, there is still the ever-present problem of *creep*. This is the term used to describe the apparent decrease in size of lines printed in a second colour: this is due to the brilliance and show-through of the paper.

Bearing this in mind, it will be obvious that, although the main line of an advertisement or programme cover may look perfectly all right when set in, for example, 36-point Perpetua and proofed in black, it will be rather disappointing when printed in a second colour—especially so if the colour is on the light side. To overcome this optical illusion the type size should be slightly increased (to 42-point in this case) or the line reset in a heavier typeface.

#### COMPLEMENTARY COLOUR HARMONIES

Complementary (note the spelling) indicates the completeness or construction of a subject—in this case the completeness of any particular hue. The complement of a colour is found by analysing the colour for which the complementary harmony is sought.

Green, for example, is composed of two primary colours: blue and yellow. The complement of green, therefore, is the missing primary—red. In the same way yellow is the complementary of violet, and blue the complementary of orange.

As each colour has a complementary which agrees with it, reference to the colour wheel will reveal six such pairs.

These are situated exactly opposite one another on the wheel, and will be seen to comprise:

- YELLOW and VIOLET
- YELLOW-GREEN and RED-VIOLET
- GREEN and RED
- BLUE-GREEN and RED-ORANGE
- BLUE and ORANGE
- BLUE-VIOLET and YELLOW-ORANGE

#### ANALOGOUS COLOUR SCHEMES

The dictionary defines analogy as “a likeness in certain respects between things which are otherwise entirely different”; and that is the basic rule underlying all such colour schemes. In other words, the colours used, though each entirely different, must have one common factor throughout—as, for example, red-orange, orange, and yellow-orange—three different colours, but each with a common factor in the primaries red and yellow. In selecting colours for such a scheme, any of the hues appearing between two primaries may be used, *but never more than one of the two primaries*, as it must be appreciated that no two primary colours bear any relationship to each other—therefore they cannot be analogous.

#### TRIAD COLOUR SCHEMES

For the ambitious student with a desire to create layouts containing more than one or two colours and yet doubtful as to which colours to use, the *triad* or three-colour schemes are undoubtedly the best guide.

These schemes consist of any three colours which are equally spaced one from the other on the colour wheel.

There are four such triads (or three-colour harmonies)

ontained within the wheel which will be seen to consist of:

RED, YELLOW, and BLUE  
RED-ORANGE, YELLOW-GREEN, and BLUE-VIOLET  
GREEN, ORANGE, and VIOLET  
BLUE-GREEN, YELLOW-ORANGE, and RED-VIOLET

#### THE VISUAL EFFECTS OF COLOUR

When designing a layout for the printing of posters, trolley-bills, shop display cards, and other forms of advertising matter required to be read easily and quickly, it is imperative to realise that not only must the wording be large, clear, and to the point but also that certain colour schemes are not only more startling but also are visually more efficient.

For letterpress printing the following two-colour schemes are the most effective:

Black on Yellow  
Red on Yellow  
Green on White  
Red on White  
Blue on White  
Black on White

Where, however, silk-screen printing is to be used, it is possible to employ such colour combinations as:

White on Blue  
White on Red  
White on Green  
White on Black  
Yellow on Black

This is possible due to the opacity of the silk-screen inks used as distinct from the transparent inks employed in letter-press printing.

#### STUDY QUESTIONS

1. Name the three primary colours and state which of them is the warmest.
2. What colour would you specify for the cover of a hymn sheet at a Service of Remembrance? Explain the reason for your choice.
3. Name the three secondary colours and how they are obtained.
4. The colour wheel is composed of twelve colours (or hues). What, then, is meant by a *tint* or a *shade*, and what would be the tint and shade of primary yellow?
5. In your own words explain what you understand by the Law of Juxtaposition.
6. What is a complementary colour harmony; and what colour is the complement of orange?
7. Describe how you would arrive at the colours to use in an analogous colour scheme.
8. What is meant by the term *triad* (or three-colour) schemes and how are these colours determined?
9. Would you specify the printing of white on red for a poster to be printed by letterpress? State the reason for your answer.

## CHAPTER TWELVE

# POSITIONING AND SPACING OF TYPE MATTER

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**I**N Chapter Eight attention was paid to margins and the law of proportion as mathematically applied to the distribution of full-page type areas. There are, however, the ever-present problems of positioning not a whole page but possibly only a very few lines or, as in the case of a half-title, almost certainly only one line. It is with this latter subject in mind that the following paragraphs and illustrations have been compiled.

### THE AESTHETIC CENTRE

Many apprentice printers and designers have expressed bewilderment when, having carefully composed the type for a title page or something of a similar nature and positioned it very carefully and accurately at the mathematical centre of the sheet, the resulting print appears unattractive and out of place. The simple answer is that the type should be placed one-eighth of the depth of the sheet *above* the centre, at what is misguidedly referred to as the "optical centre."

The "optical centre," or "visual centre," seems to be in some ways a misnomer, for the eyes, normally, tend to look slightly below the true centre and require the use of the optic muscles and nerves to look upwards—therefore the eyes would prefer the type *below* centre. But the eyes, it must be remembered, are only the windows through which we

are permitted to see the world around us, and have in themselves no preference or taste, merely transmitting to the brain the picture presented to them—and it is the brain, the higher intelligence, which aesthetically decides whether or not the type is in the correct position.

The problem then is one of aesthetics and has no connection whatsoever with optical considerations or any mathematical formulae. In brief, it is a matter primarily of good taste, and it is the prerogative of each individual to place the type matter in the position where it pleases him most.

When designing any article of printed matter from a dance ticket to a Quad Crown poster, the foregoing paragraphs on what will in future be referred to as the “aesthetic centre” should be borne in mind.

The most important feature in any layout should, if possible, be placed somewhere near the aesthetic centre. It may be argued that the prospective customer has made the main line the first item on his rough; but to follow this would inevitably result in “skying” the most important feature by placing it too near the top of the card or poster. Far better to suggest an alternative layout to the customer by which some less-prominent matter may be allocated to the upper portion of the design and permit the main line to be placed nearer to the aesthetic centre. To appreciate this point more readily refer to the two settings of the same card (Figs. 60 and 61) and note the difference imparted by the simple transposition of but a few lines. This invisible line across the page can also be effectively adhered to even when designing asymmetrical layouts and including such items as reverse-line and bled-off half-tone blocks by using this position as a division between various units comprising the design.

# *Chinese Art Exhibition*

Monday June 17th to Friday June 28th, 1963

In the Large Hall of the Main Building  
College of Further Education  
Kingsway, Dunstable

*A colour film showing some of the artists at work in China  
will be screened each evening at 7.30*

ADMISSION GRATIS

FIG. 60.—The main line is too near the top of the card and upsets the balance of the entire design.

COLLEGE OF FURTHER EDUCATION  
Kingsway, Dunstable

# *Chinese Art Exhibition*

Monday June 17th to Friday June 28th, 1963

In the Large Hall of the Main Building

*A colour film showing some of the artists at work in China  
will be screened each evening at 7.30*

ADMISSION GRATIS

FIG. 61.—The main line is placed almost on the aesthetic centre and provides a more pleasing arrangement.

Though the young and inexperienced designer must be prepared to accept the various laws already expounded regarding proportion, the centring of type matter and so forth, it must be appreciated that with careful planning and strategic positioning of each individual item, the main line of a job—especially if it is a landscape proportion—can be effectively placed *below* the true centre without offending the design (*see* Fig. 62).

Bedfordshire County Council, Luton Committee for Education  
the Principal and Governors of the  
Luton College of Technology  
invite you to the reception and opening of  
an exhibition of work by Luton Graphic Design students

## **Graphic '64**

on Friday, May 16th, at 7 p.m., in the  
Luton Central Library

R.S.V.P.

FIG. 62.—The main line in this instance has been positioned below the mathematical centre.

Naturally a skilled typographic designer is capable of drawing a layout to such a degree of accuracy that the type proof will fit it exactly. For students, however, it is a good idea to first set the design in type (if this is possible), obtain one or two clean sharp prints from it, and then cut out each line with a make-ready knife or a pair of scissors and rearrange the lines on a fresh sheet until they are correctly spaced. Having done this, it is possible to paste the

strips in position and then respace (or even reset) the actual type matter to coincide.

#### LETTER SPACING

Undoubtedly one of the most elementary lessons to be assimilated by printers and designers alike is that of letter spacing. This can be carried out in two entirely different ways and for two somewhat different reasons; therefore it is imperative to understand *why* this spacing between certain characters (or all the characters) in a word is considered desirable.

The first point to be remembered where the spacing of letters is concerned is that it applies *only to capital (or small capital) letters*, and should never be applied to lower-case characters except in the most extreme circumstances.

The individual spacing of letters is resorted to for the specific reason of rendering the printed word more legible than it would appear if set solid, and the degree of space allotted to each letter is usually a “thin”—the term used to denote the thinnest space normally cast and measuring one-fifth of the type body size. The text of this book is composed in 11-point type, therefore the corresponding thin space measures approximately 2 points (or  $\frac{1}{36}$  in.).

To appreciate the difference created by the insertion of a thin space between each character in a word, note the following example:

#### DESIGN AND PRINT DESIGN AND PRINT

Notice also that in addition to the letter spacing it has been necessary to increase the spacing between the words to prevent them from “running together.”

When letter spacing small capitals it is only necessary to use "hair" spaces to separate the characters: these are specially manufactured and are only 1 point thick. This, however, is not a hard-and-fast rule, and indeed many people prefer to see thin spacing employed.

#### DESIGN AND THE PRINTER

#### DESIGN AND THE PRINTER

#### DESIGN AND THE PRINTER

FIG. 63.—These three lines show the different appearance created by setting: first, without any letter spacing whatsoever; secondly, with hair spacing; and lastly, with thin spacing.

#### OPTICAL SPACING

Though still concerned with the insertion of space between letters, optical spacing is an aesthetic problem in addition to being an aid to legibility and, though not strictly true, is concerned more with the larger display faces than with text faces.

The need to optically space letters can be traced to either the design of the typeface, the combination of certain letters which do not fit snugly together, or a union of both these factors.

In Bembo, for instance, the capital R has a long, almost swash tail which makes it impossible to avoid an apparent gap between this letter and the succeeding character in the same word. This problem is experienced to a certain degree in almost all typefaces when composing certain words as illustrated in Fig. 64, where the opposing angles of adjacent letters create rivers of white space.

The perfect way to overcome this effect would be to mortise the characters to fit more closely together, but unfor-

tunately the average printer is not sufficiently well equipped to perform this intricate operation, and it is therefore necessary to revert to letter spacing—only in this instance the space is inserted between *some* letters to open them out until they present an even appearance throughout the entire word.

## BRAKE            YACHT VANITY

FIG. 64.—Optical spacing of certain letter combinations improves the visual appearance.

The amount of space required will vary not only in each word or type size but also between the respective characters in the word being adjusted.

### PLACING OF INITIAL LETTERS

Simple though it may seem, the *correct* placing of initial letters is a very precise art, and many factors must be carefully considered before proceeding.

First, the initial letter should “line up” with a specific number of text lines as determined by the designer or layout artist. That is to say the top of the letter must be level with the other capital letters forming the first word, and the foot of the letter must stand on a line level with the base of the third, fourth, or fifth line of text—or whatever line is thus specified (*see* Fig. 65).

Often it will be found difficult to find an initial which will fit these specifications exactly, and if the letter is but a fraction too small it can often be accommodated by using small capital letters in place of the more usual capitals, as shown in

**T**HIS initial letter lines up exactly with three lines of type and the first word is completed in normal capital letters.

FIG. 65.—Example of an initial letter lined up with full-sized capitals.

Fig. 66. In such circumstances it is also advisable to use small capitals not only for the first word but for the next two or three also.

Having decided upon the size of initial to be employed, there is yet another problem to be considered.

If the letter is composed in the same setting stick to the actual text-matter width, in all probability the initial will appear to be slightly indented, and for that reason it is desirable to make the letter protrude into the left-hand margin to a certain extent. The amount of this protrusion is dependent upon the initial in question as illustrated by Figs. 66 and 67.

: Text-matter width :  
**E**VERY ENDEAVOUR should be made to ensure that the lines of text fit exactly to the depth of the initial—even if this means resorting to the use of small capital letters.

FIG. 66.—Note that the serifs of the initial letter range into the left-hand margin.

**W**HERE the first word commences with an initial W (as in this example), it is necessary to increase the amount of protrusion into the left-hand margin: thereby preventing the initial from appearing somewhat indented.

FIG. 67.—Compare the placing of this initial with that in the previous example.

So far we have considered only initial letters which, due to their formation, readily combine with the smaller letters to make the word required. There are, however, certain letters which tend to complicate the compositor's task in this respect—the worst offenders being the capitals A and L. It is not unusual to see paragraphs commencing with one or the other of these characters without reference to the bad spacing which ensues (*see* Fig. 68).

**A**MONG the numerous problems confronting the printer, the correct placing of initial letters demands a very keen sense of design.

**L**ONDON is not only the capital of England but the city where Caxton established his printing press at Westminster in the year 1476.

FIG. 68.—Note the bad spacing of the first word in each of the above examples. This problem can be easily remedied by mortising the initials.

Obviously these initials should be mortised to permit the first line of type to fit close up to them, thereby facilitating reading and giving a more pleasing appearance to the printed page.

It is the attention to seemingly small and insignificant details such as these which raise the finished print from the quagmire of commonplace to the realm of art—and the compositor from an ordinary worker to a respected craftsman.

### PLANNING AND LAYOUT

The purpose of a layout is two-fold: (i) it permits the customer to see and approve the job he will eventually receive without the need for costly typesetting, block making, and so on; (ii) in its finished form the layout will act as a specific guide to the printer, and at that stage should contain detailed instructions to enable each worker to carry out his particular section of the job without further reference.

Before attempting any layout it is imperative that the artist or designer be furnished with *all* the details concerning the job to enable him to visualise it as an end product. Also, and most important, the designer must have a sound knowledge of typefaces, printing processes, and production costs in addition to his specialist vocation.

#### Thumb-nail Roughs

It is seldom possible, or advisable, to sit down and immediately produce a finished layout which will be found satisfactory in all directions. It is better to commence by making a few small "thumb-nail" roughs, each probing or seeking out a different aspect or arrangement of the copy. From these roughs the customer or layout artist can select the most promising design for more detailed treatment. Remember, however, that even a "thumb-nail" sketch must conform to the same proportions as the intended finished layout.

#### Rough and Comprehensive Layouts

Once the thumb-nail sketches have been examined and a selection made, a full-size "rough" layout is prepared to indicate, within reasonable limits, how the actual printed product will appear. All display lines must be lettered-in to re-

present the typeface and size to be used, and the specific areas to be occupied by illustrations clearly marked up.

From the results of this layout and, possibly, some further discussion with the client, a "comprehensive" or "working" layout may be produced. This layout will be the exact finished (trimmed) size of the job when printed. Proofs of illustrations (if available) should be pasted in position; all lettering, art work, and indications of body sizes, etc., should be clearly marked—so that the layout will resemble as closely as possible the appearance it will give when turned into print.

### Copyfitting Display Lines

In Chapter Seven various formulae are given to assist in the "fitting" of text or body matter, but, naturally, in the case of display lines no such formula is either applicable or necessary. In the first instance the "set" width of display types varies tremendously from, for example, Extra Condensed Grotesque to Egyptian Expanded, so that calculations would be virtually impossible and, secondly, it is usual practice to draw these faces direct on to the layout and not merely to indicate their presence by a few lines.

In order, therefore, to fit display lines and that the lettering should occupy the correct amount of space, the required characters should be copied from a Type Specimen Card. The simplest, and perhaps the most efficient method, is to use a strip of paper which is placed partly over each letter in the order in which they will appear, making a neat pencil mark to indicate the width of each character. From this strip it is an elementary matter to transfer the marks to the layout, and then to copy the actual letters from the Specimen Card.

## STUDY QUESTIONS

*Positioning of Type Matter*

1. How far down the page would you place a single line of type if the overall depth of the page was 8 in.?
2. Why is it considered incorrect to place the main feature of a displayed advertisement in the mathematical centre of the job?
3. What do you understand by the term *skied* (or skying)?
4. Mention is made throughout various chapters in this book of *aesthetics*. What does this word mean?
5. Design a landscape advertising blotter measuring  $3\frac{3}{4}$  in. by  $8\frac{3}{4}$  in. for a firm of Continental Car Distributors. The wording is left to your own imagination but the main line must be positioned *below* the mathematical centre.

*Letter Spacing*

6. What do you understand by the term "letter spacing"?
7. You have a line of 10-point small capitals to letter space. How much spacing would you allow between each character?
8. Assuming the running-head of a book to be set in 12-point Times Roman capitals and spaced with "thins," approximately how much space would you allow between the individual words? Explain the reason for your answer.

*Optical Spacing*

9. What is the fundamental difference between *optical spacing* and *letter spacing*?
10. From various magazines and periodicals obtain not less than six examples of display lines which should have been optically spaced.
11. In the word A V E R T it would normally be necessary to insert space between each letter with the exception of the first two. What other method could be adopted to equalise the spacing in this instance?

*Placing of Initial Letters*

12. Describe the main considerations to be taken into account when placing an initial letter at the beginning of a chapter.

13. Why should certain letters be set to protrude into the left-hand margin instead of ranging with the correct text matter width?

14. The first word of a new chapter is LINDISFARNE. Draw a neat layout to indicate how you would place this word, assuming the page type area to be 20 picas wide and the text to be set in 10-point type on a 12-point body—the inclusive depth of the type area being 36 picas.

15. The only suitable initial available is just a fraction too small to line-up with the three lines of text as specified in the layout. What course of action would you undertake to overcome this problem?

#### *Planning and Layout*

16. Reference has been made to “thumb-nail” sketches. What do you understand by this term and what is the function of such sketches?

17. Discuss the advantages of a layout as applicable both to the client and the printer.

18. In your own words describe the way in which you would “copy-fit” display lines.

## CHAPTER THIRTEEN

# CARE AND USE OF DRAWING AND PAINTING INSTRUMENTS

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**I**N order for the student to produce the best possible lettering and layouts of which he is capable, it is essential to have a sound knowledge of the various drawing and painting instruments which will be used and the type of work for which each is most suited. The following text and illustrations will show how these instruments *should* be employed; study and practice with them to increase your proficiency.

### PAPER

#### Securing Paper to Drawing Board

Before commencing any drawing, irrespective of how simple it may be, it is imperative that the paper to be used is secured squarely and smoothly to the board. For this it is necessary to place a T-square over the paper and, holding it firmly against the left-hand edge of the board, draw it smoothly down until its upper edge is parallel with the lower edge of the paper; in this position the upper left-hand corner should then be attached to the board with a small piece of Sellotape (*see* Fig. 69). The paper should then be smoothed carefully to the lower right-hand corner and secured as previously. Working from the centre of the sheet, the paper should be smoothed to the upper right-hand corner and taped in position; a final smoothing from the

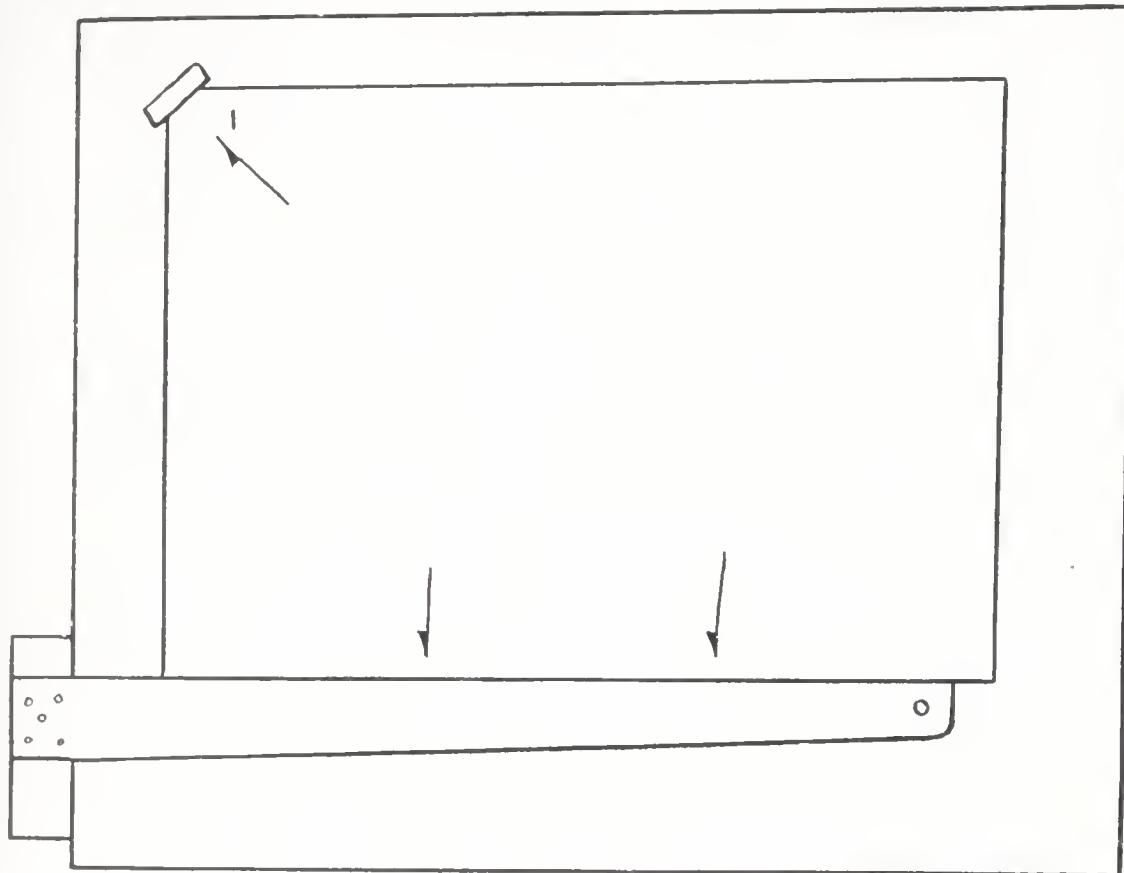


FIG. 69.—Correct method of attaching paper to drawing board.

centre to the lower left-hand corner enables the sheet to be taped firmly (*see* Fig. 70).

Note that the instructions are to *tape* and not to pin. Not only is this method more satisfactory but it also preserves the board from the numerous small holes which eventually ruin its surface.

The T-square must be held firmly and squarely against the left-hand edge of the drawing board at all times, and in no circumstances should another T-square be substituted until that particular job has been completed and removed from the board.

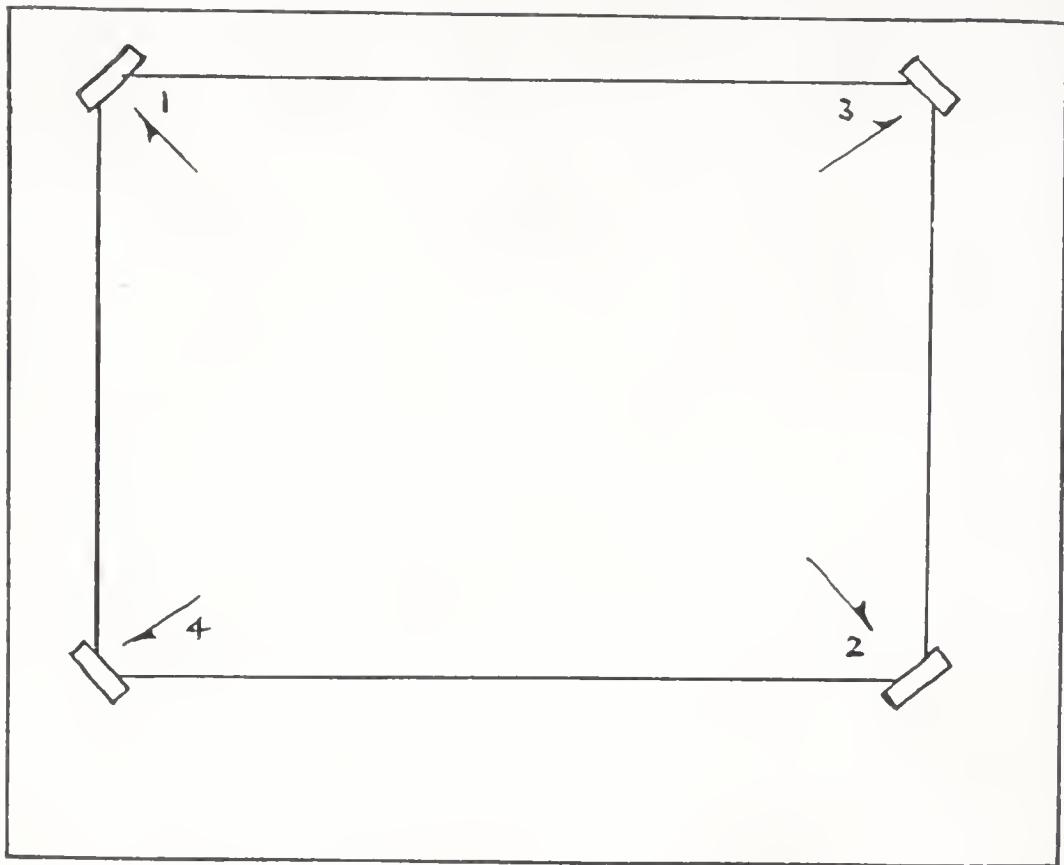


FIG. 70.—Sheet secured to drawing board showing sequence of operation.

## INSTRUMENTS

### Drawing Pencils

The majority of pencils carry a reference mark which indicates the softness (or hardness) of the graphite core. The softest and blackest pencils carry the mark 7B, and progress through the letters 6B, 5B, 4B, 3B, 2B, B, HB, 2H, 3H, 4H, 5H, 6H, 7H, 8H, and 9H (the hardest). An H or 2H pencil is suitable for lettering, but for sketching and art work one or more of the B grade pencils is to be preferred.

When sharpening a pencil the wood should be removed with a sharp penknife or other suitable instrument until approximately  $\frac{1}{4}$  in. of the graphite is exposed. The actual point should not be made with the knife, but rather with a



FIG. 71.—Pencil sharpened to a conical point.

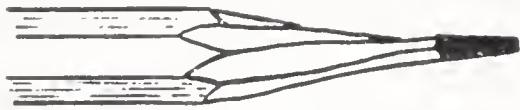


FIG. 72.—Pencil sharpened to a chisel point.

piece of sand-paper glued to a small block of wood. By the use of this simple device, conical (Fig. 71) or chisel points (Fig. 72) may easily be fashioned according to the type of work for which it is required.

When using a pencil apply sufficient pressure only to produce the marks required: it should never be necessary to cause any form of indentation to the surface of the paper which might prove difficult to erase should the need arise.

#### Artists' Water-colour Brushes

The enthusiastic designer would be well advised to equip himself with a full range of best-quality artists' brushes ranging from No. 00 to No. 14; unfortunately this series costs in the region of £15, and would be prohibitive in the majority of cases.

To begin with, a No. 1, No. 3, and No. 5 sable, and a No. 12 badger mop brush (for laying background washes) will be found most useful. These four brushes will suffice for the majority of elementary layout work and may be purchased for under £1; additional brushes may then be added as and when the occasion arises.

After use the brushes must be thoroughly washed in clean water, wiped dry with a piece of cloth, and stored in such a manner as to prevent damage to the hair. A simple arrangement is to cut two or three small notches in either edge of a piece of stout card approximately 2 in. wide by 1 in. longer than the length of the brushes; attach rubber bands round

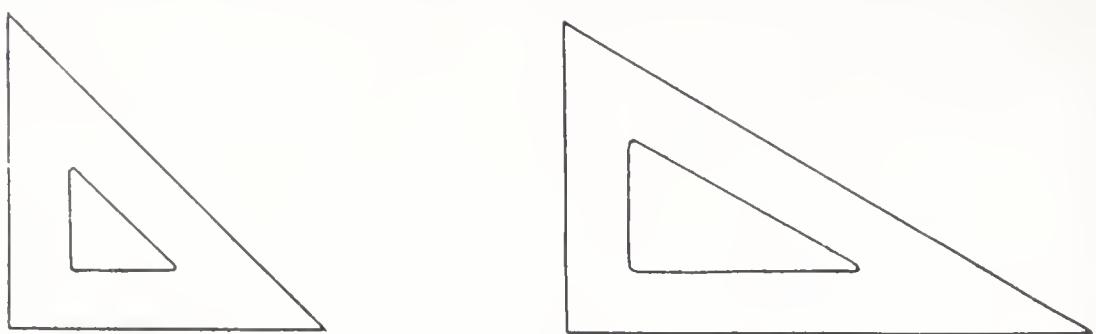


FIG. 73.—45-degree and 30-60-degree set-squares.

the card by means of the notches and slip the brushes under the bands—this will hold them securely and protect the ends at the same time.

### T-Squares

Manufactured in both hardwood and metal, the T-square is used as a guide for drawing horizontal lines in addition to acting as a rest for set-squares when drawing lines vertically and at an angle.

When using a T-square the blade should be placed on the drawing board with the head held firmly against the left-hand edge of the board; sliding the head of the T-square along the drawing-board edge will permit the drawing or ruling of parallel horizontal lines, which should always be drawn from left to right and working from the top of the paper down to the bottom.

A T-square having a 21-in. or 23-in. taper blade will be suitable for use with a half-imperial drawing board.

### Set-Squares

Manufactured in transparent celluloid or plastic, set-squares are used as guides in drawing vertical and inclined lines, with or without the aid of a T-square. In addition to the most commonly used 45-degree and 30-60-degree set-squares (Fig. 73), the adjustable type (Fig. 74) is extremely

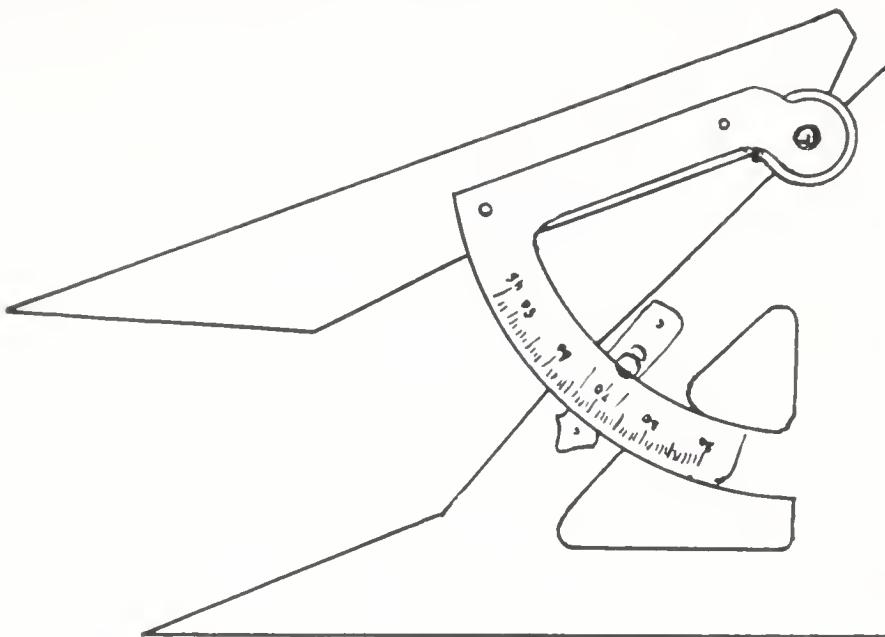


FIG. 74.—Adjustable type set-square.

useful for drawing lines at any specified angle. Alternatively, it is possible to draw parallel lines at unusual angles by employing two ordinary set-squares as shown in Fig. 75. It is necessary to place the edge of one set-square at the required angle and butt the second set-square up against the first to act as a slide. It is then possible to hold the second set-square firmly with the thumb, third and fourth fingers of the left hand and slide the other set-square with the remaining two fingers.

#### Rules and Type Scales

For measuring purposes a transparent bevel-edged rule is essential. The bevel edge assists in the more accurate marking-off of the distances required by bringing the measurements on the rule or scale into closer contact with the paper surface.

It is important, however, to remember that printers measure only paper and envelope sizes in inches—all type-setting (whether it be display or solid text) is based on the “point

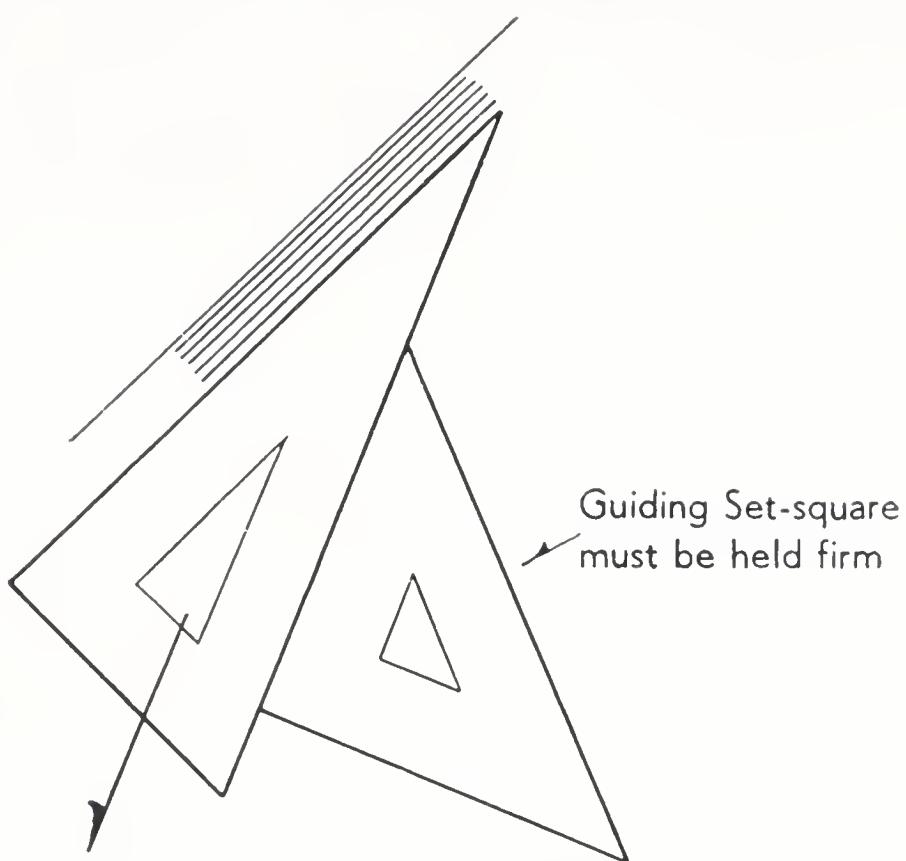


FIG. 75.—Method of drawing parallel lines by the use of two ordinary set-squares.

system" of measurement as explained on p. 116). For that reason it is imperative to use a plastic or steel type scale when specifying type areas, giving block sizes, and so forth—and to express these measurements in 12-point ems or picas!

### Ruling (or Spring Bow) Pens

For the ruling (in ink or water-colours) of all straight lines a ruling pen is indispensable. This is a special instrument having two blades in place of the more familiar nib: these blades should be of equal length, slightly sharp, and have a screw device for controlling the aperture between them—thereby permitting the ruling of lines of varying thickness.

Never dip the blades into the ink, as this will wet their

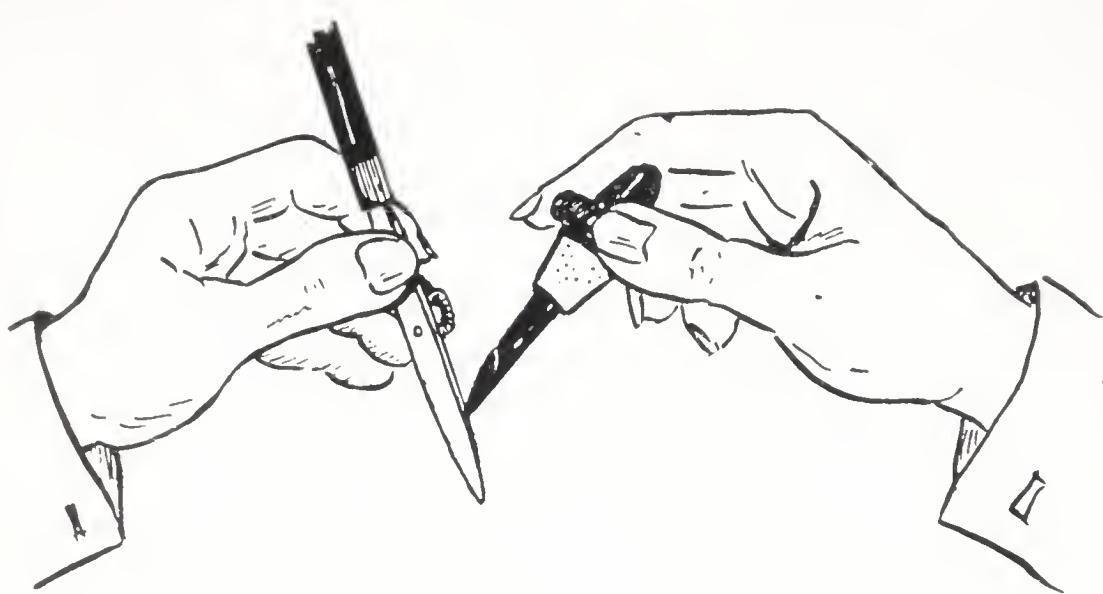


FIG. 76.—Correct method of filling Ruling (or Spring Bow) Pens.

outer surfaces, which must at all times remain perfectly clean and dry. Fill the pen by placing ink (or water-colour) between the blades either with the quill point of the ink-bottle stopper (Fig. 76) or with a small water-colour brush. Do not allow the ink to extend more than  $\frac{1}{4}$  in. up the inside of the blades, as the excessive weight may cause the ink to run and blot the paper.

In use, the pen should be held almost perpendicular against the guide and inclined very slightly to the right—the direction in which the line is to be ruled (*see* Fig. 77). The

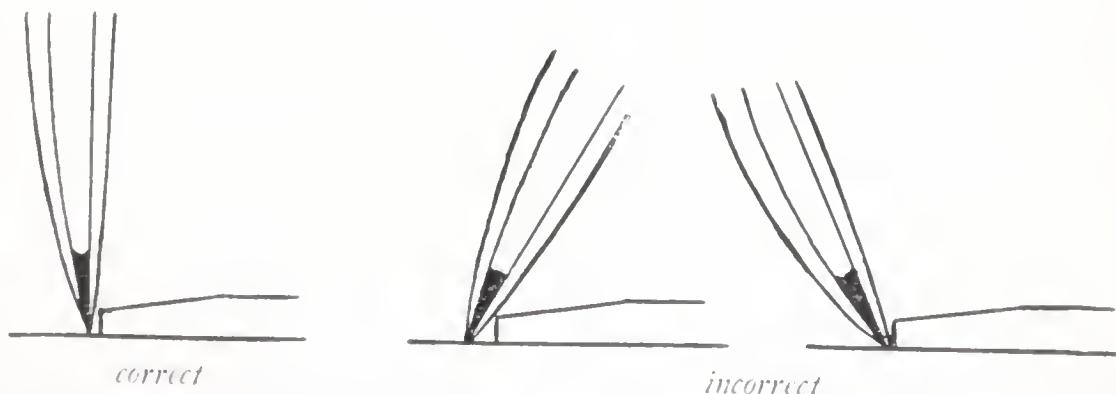


FIG. 77.—Angle at which pen should be held when a line is being ruled.

need for holding the pen perpendicular is threefold: (1) it keeps both blades in contact with the paper surface and rules a perfect line; (2) if inclined away from the ruling edge only one blade will contact the paper, resulting in a scratchy, broken line, which will eventually become starved of ink; (3) if inclined towards the ruling edge the ink will in all probability run under the rule to cause a blot. Reference to Fig. 77 will illustrate these points.

During use it will be found necessary to clean the blades frequently to prevent clogging, as this will interrupt the ink flow. After use insert a small piece of cloth between the blades, rotate the pen until the cloth is wrapped round it once; then, exerting slight pressure on the blades, withdraw the pen through the cloth. Repeat this operation with a damp cloth and then a dry cloth: the pen should now be perfectly clean and dry. Lastly, release all pressure from the blades to preserve their spring tension.

Ruling (or Mapping) pens are also apt to clog during use and should frequently be washed in clean water and carefully dried before continuing. If the pen is not sufficiently dried the resulting lines will lack strength due to the "watering down" and may easily result in a blot.

After use always wash and dry the pen, taking great care not to disturb the delicate nib, which, once bent or crossed, is of little further use.

#### STUDY QUESTIONS

1. Describe the correct method of securing paper squarely and smoothly to a drawing board.
2. Why is it considered inadvisable to pin the paper to a drawing board?

3. How would you express the measurement of page type areas when writing instructions for the printer?

4. What instrument would you require for the ruling of true circles or parts thereof, and how would you clean such an instrument after use?

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## BIBLIOGRAPHY

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HAVING studied the contents of this little book, it is sincerely hoped that you may desire to delve further into one or more of the subjects embraced. The specialised books listed below (ranging in price from 3s. 6d. to 50s.) will mostly be found readily available in your local Lending or Reference Library, or you may prefer to add them to your own private collection.

**Four Centuries of Fine Printing:** Stanley Morison.  
Ernest Benn Ltd., London, 1960.

**Introduction to Greek and Latin Paleography:** Sir E. M. Thompson. Oxford University Press, 1912.

**Introduction to Typography:** Oliver Simon, O.B.E. Penguin Books Ltd., Middlesex, and Faber & Faber.

**An Approach to Type:** John R. Biggs, M.S.I.A., A.T.D. Blandford Press, London, 1961.

**Desk Catalogue of 'Monotype' Faces:** The Monotype Corporation Limited, London.

**Lettering:** Percy J. Smith. A. & C. Black Ltd., London, 1936.

**Modern Publicity:** The Studio Publications. *Issued annually.*

**Penrose Annual:** Lund Humphries & Co. Ltd., Bradford.

**Typography for Students:** E. G. Shepherd, F.T.C. Macdonald & Evans Ltd., London, 1958.

**Advanced Typography for Students:** E. G. Shepherd, F.T.C. Macdonald & Evans Ltd., London, 1960.

**Writing and Illuminating and Lettering:** Edward Johnston. Pitman, 1906.

**Methods of Book Design:** Hugh Williamson. Oxford University Press, London, 1956.

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